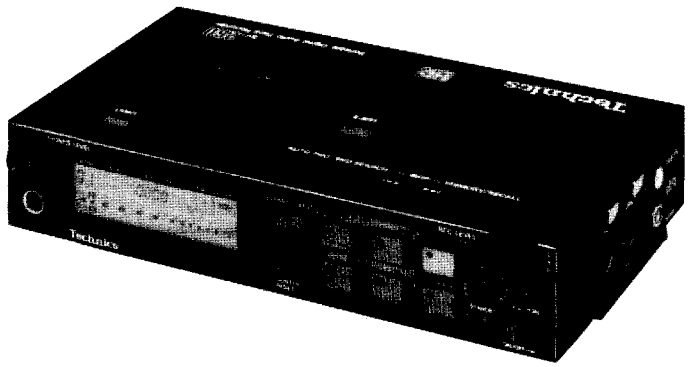
ORDER NO. AD8901017C2

Service Manual

Portable Digital Audio Tape Recorder

SV-260



Color

(K)... Black Type

Area

Country Code	Area	Color
(E)	Continental Europe.	(K)
(EB)	Great Britain.	(K)

SPECIFICATIONS

Signal format

Recording system: Rotary-head DAT
Sampling frequencies:
Recording; 48 kHz
Playback; 44.1 kHz, 48 kHz (automatically switched)
Decoding: 16-bit linear

Audio

Number of channels: 2 (stereo)
Frequency response: 10 Hz–22 kHz, +0.5 dB, −1.5 dB
Dynamic range: More than 87 dB
S/N ratio: More than 88 dB (full scale level)
Total harmonic distortion: Less than 0.05% (input level +4 dBm, output level −14 dBs)
Wow & flutter: Unmeasurable

Input/output terminals

Line input:
(attenuator on); +4 dBs
(attenuator off); −10 dBs
Line input impedance: more than 10 kΩ, balanced, transformerless
Mic input:
(attenuator on); −60 dBs
(attenuator off); −74 dBs
Mic input impedance: more than 10 kΩ, balanced, transformerless
Line output: −14 dBs (RCA phono jacks×2)
Line output impedance: 1.2 kΩ, unbalanced
Headphone output: 20 mW+20 mW, 16Ω load
Digital output: Coaxial 75Ω, cable supplied

Mechanism section

Head: Amorphous Ferrite mixed type
Cylinder: 15 mm diameter, wrap 180 degrees
Revolution of cylinder: 2000 r.p.m. (record/playback)
Tape speed: 8.15 mm/sec. (playback: 8.15/12.225 mm/sec. switched automatically)
Search speed: Approx. 60 times normal speed (maximum)
FF/REW time: Approx. 120 sec. (with 120-minute tape)

General

Power supply: AC 110–120/220–240 V, 50/60 Hz, 20 W (with supplied AC adaptor)
DC 6 V, approx. 4.3 W (with supplied rechargeable battery pack)
Maximum continuous battery operation (continuous recording and playback): Approx. 2.2 hours (with 8-hour battery charge)
Dimensions: (W×H×D) 228×44×137 mm
Weight:
Including battery; 1.45 kg
Without battery; 1.08 kg

Note:
Specifications are subject to change without notice.
Weight and dimensions are approximate.

Technics

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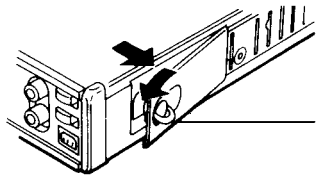
■ POWER SUPPLY

1. Using the rechargeable battery pack

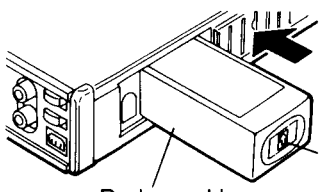
Note:
The rechargeable battery pack of this unit was charged by the manufacturer before shipping. However, during transport and storage it may have discharged.
Be sure to recharge the battery pack before using it for the first time.

1 Open the cover on the rear panel of this unit.



Raise the recessed ring and turn it in the direction marked OPEN.

2 Insert the rechargeable battery pack into the battery compartment.



Rechargeable Battery Pack (included)

- The rechargeable battery pack is marked with arrows indicating the correct direction in which to insert it into the recorder.

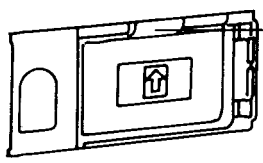
Check the arrows as indicated in the diagram to make sure the rechargeable battery pack is inserted right side up.

3 Close the cover.

Turn the ring in the direction marked CLOSE and return it to its recessed position.

Removing the rechargeable battery pack

Open the cover, press and lift the locking latch, and gently remove the rechargeable battery pack by hand. Tilt the unit slightly to get the rechargeable battery pack out.



Locking latch

Checking the battery capacity

The strength of the charge remaining in the battery is shown on the BATTERY indicator on the right side of the display.

BATTERY

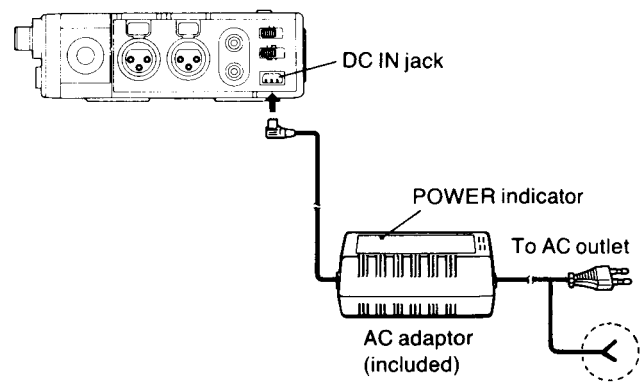
E ■■■ F ···· Battery is fully charged.

■■□ ····, Sufficient power to run the unit but charge is low.
■□□ ····'

Flash on and off ···· When the battery charge indicator begins to flash on and off, the unit will automatically shut itself off after approximately three minutes.

Recharging the battery pack

Connect the AC adaptor to the unit with the battery pack loaded normally. The POWER indicator light on the AC adaptor will go on and recharging will commence.



For (EB)

Fit a suitable plug to the AC power supply cord.

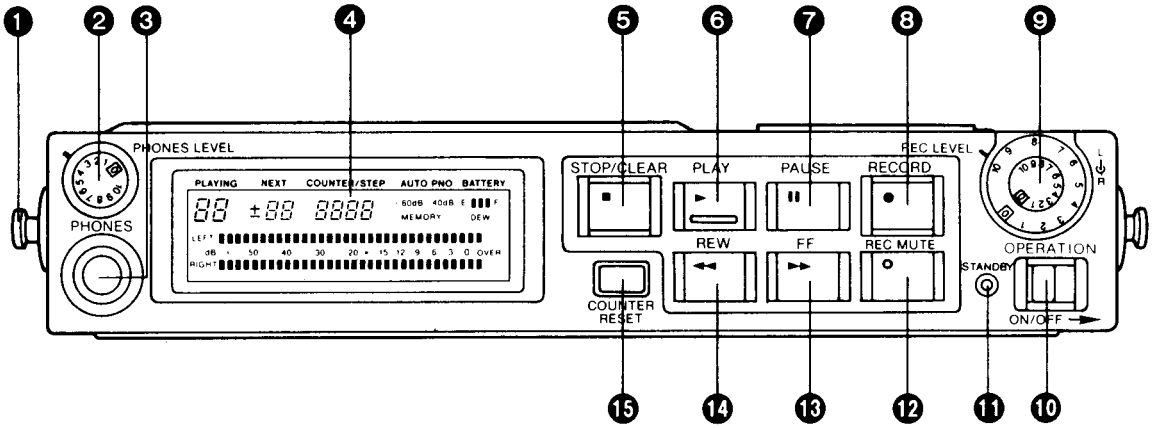
Recharge battery pack with the power OFF.

Charging time		Operation time
About 4 hours	⇨	About 2.0 hours
About 8 hours	⇨	About 2.2 hours

- The unit can be powered with the AC adaptor while the battery pack is being recharged.
- The POWER indicator light goes off as recharging nears completion; however, leave the unit connected to the AC adaptor for the full time period as given above.

■ PANEL CONTROLS AND FUNCTIONS

Front panel



❶ Carrying belt anchor (on both sides)

❷ PHONES LEVEL control

Use this control to adjust the output level to the headphones.

> When listening to music with stereo headphones, avoid listening for prolonged periods of time. Hearing experts advise against continuous extended play.

❸ PHONES jack

❹ Display panel

❺ STOP/CLEAR button and indicator (■)

Press to stop tape running. This button also clears the program memory. (Indicator illuminates when in STOP mode. During end search operation or tape loading/unloading, the indicator flashes on and off.)

❻ PLAY button and indicator (▶)

Press to initiate recording or playback. This button is also used to record track numbers manually. (Indicator illuminates during playback and recording.)

❼ PAUSE button and indicator (❚❚)

Press to temporarily interrupt playback or recording. (Indicator illuminates while in PAUSE or recording standby mode.)

❽ RECORD button and indicator (●)

Press to put the unit in the record standby mode. When ready to begin recording, press the PLAY button after the RECORD button. (Indicator illuminates during recording and when in recording standby mode.)

❾ REC (record) LEVEL controls

Use these controls to adjust the recording level.
The outer control adjusts the right channel level and the inner control the left channel level.

❿ OPERATION switch

Push to the right to turn the unit on and off.

⓫ STANDBY indicator

- When the unit is left in the STOP or PAUSE mode for approximately 10 minutes, the STANDBY indicator will light up and the unit will automatically go into an energy saving STANDBY mode.
- If the unit is left in the STANDBY mode for approximately 30 minutes more, it will automatically turn itself OFF.

⓬ REC (record) MUTE button (○)

Press to insert a silent section of approximately four seconds.
Press the PLAY button to resume recording.

⓭ FF (fast-forward) button and indicator (▶▶)

Press to wind the tape rapidly forward. (Indicator illuminates while tape is advancing.)

- If this button is pressed when the unit is in the STOP or PAUSE mode, the tape will move at 60 times its normal speed.
- When this button is held down during playback, the tape will move at 11 times its normal speed.

⓮ REW (rewind) button and indicator (◀◀)

Press to wind the tape rapidly backwards. (Indicator illuminates while tape is rewinding.)

- If this button is pressed when the unit is in the STOP or PAUSE mode, the tape will rewind at 60 times normal speed.
- When this button is held down during playback the tape will rewind at 15 times normal speed.

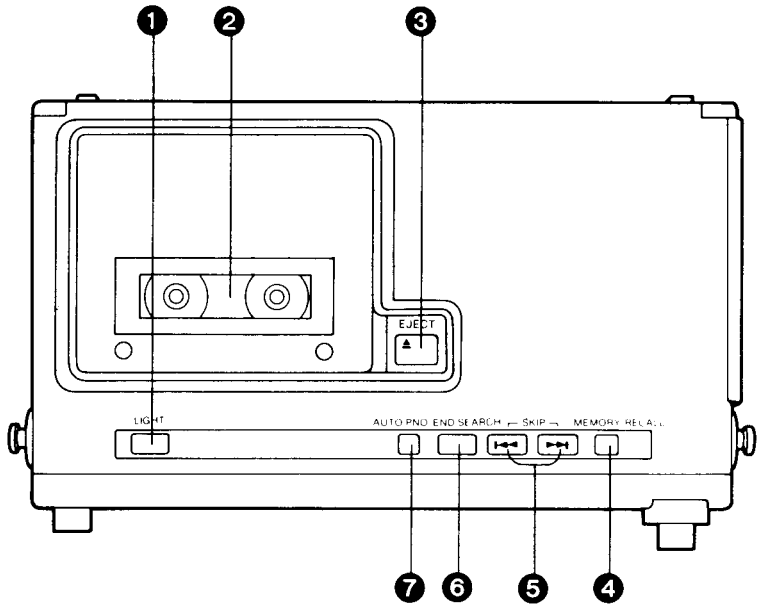
Fast Rewind

If the REW button is pressed while the tape is rewound, you will shift into an even faster rewind mode.
[The rewind indicator (◀◀) flashes on and off during fast rewind operation.]

⓯ COUNTER RESET button

Press to reset the tape counter to "0000".

Top panel



❶ LIGHT switch

- Press this switch to light up the display. When using the AC adaptor to power of the unit the display will stay lit.
- Under battery power, however, the display will stay lit for about 20 seconds, when this switch is pressed and then goes out as an energy saving measure.

❷ Cassette holder

❸ EJECT button (▲)

Press this button to open the cassette holder.

❹ MEMORY/RECALL button

Used to enter steps in random access programming. When this button is pressed during program play (recall mode), the display will indicate each program step as they were entered.

❺ Forward and backward SKIP buttons (|◀◀ • ▶▶|)

These buttons are used to specify the desired program number for the following three operations:

1. **Program playback**
2. **Access playback**
3. **Skip playback**

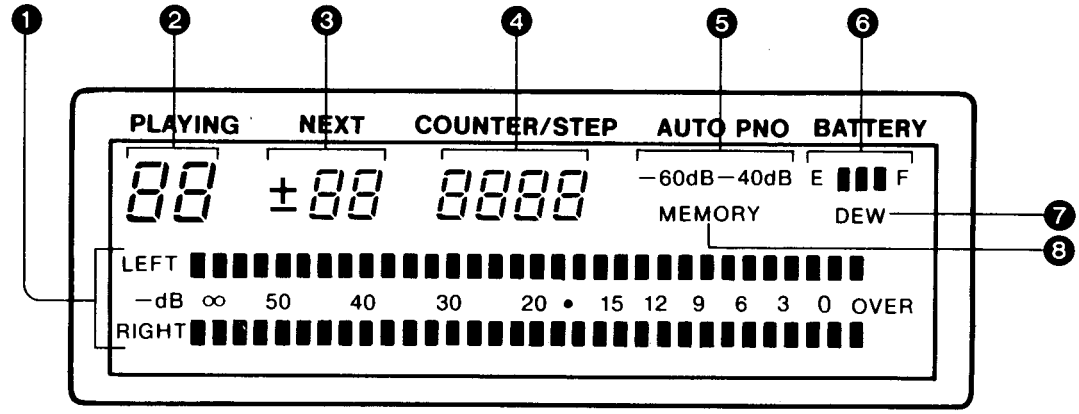
❻ END SEARCH button

When this button is pressed, the tape advances rapidly to the last recorded position on the tape and then stops. This is useful when it is desired to continue recording from the last recorded position.

❼ AUTO PNO (program number) button

Press this button to have program numbers recorded on the tape automatically during recording, and to set the sensitivity level for trigger a program number increment in auto mode.

Display panel



❶ Recording/playback level meters (peak level)

- During recording, shows the recording level.
- During playback, shows the playback level.
- The upper meter shows the level of the left channel signal and the lower meter shows the level of the right channel signal.

❷ PLAYING display

Shows the program number being played.

❸ NEXT display

- During program playback, shows which program number is coming up next.
- When programming, shows the program number.
- During skip play, shows the number of tunes which is being skipped over.

❹ COUNTER/STEP display

- The 4-digit tape counter shows the position on the tape. While programming a sequence of tunes, the counter shows the step number of the programmed sequence. (P-01, P-02...P-03).

❺ AUTO PNO (program numbering) display

Shows the automatic inter-track gap detection level. For auto program number recording, press the AUTO PNO button to toggle between the −40 dB and −60 dB settings.

❻ BATTERY indicator

This indicator gives an approximate indication of the charge level remaining in the batteries.

E■■■F ... Batteries are fully charged.

E■ F ... Batteries are almost completely discharged. (When the last segment of the battery indicator flashes on and off during recording or playback, the unit will automatically shut itself OFF in approximately three minutes.)

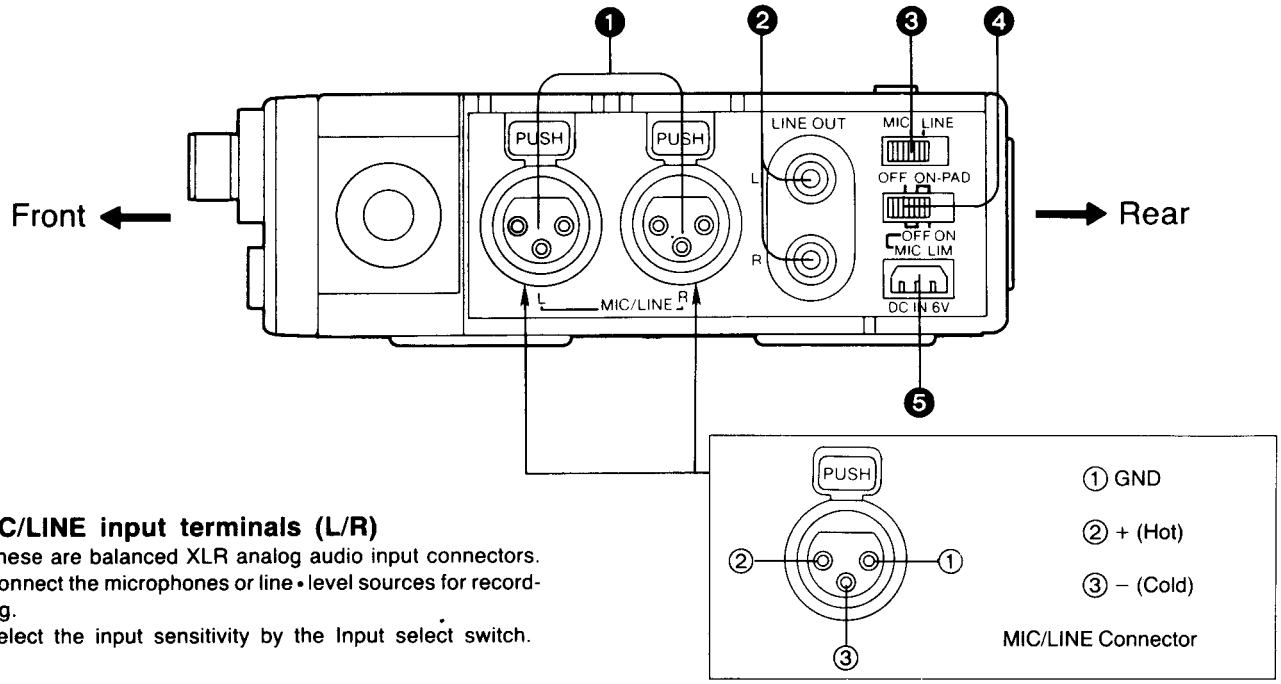
❼ DEW indicator

Shows that moisture has condensed inside the unit.

❽ MEMORY indicator

Shows that program numbers have been entered in the memory when the MEMORY/RECALL button is pressed for programming.

Right side panel



❶ MIC/LINE input terminals (L/R)

- These are balanced XLR analog audio input connectors.
- Connect the microphones or line • level sources for recording.
- Select the input sensitivity by the Input select switch.

❷ LINE OUT jacks (L/R)

- These are the audio output terminals for playback.
- Connect to the input terminals of an amplifier.

❸ Input select switch (MIC/LINE)

This switch selects input sensitivity of the input preamp circuit.

LINE .... Use this setting to record from line level sources.

MIC .... Use this setting to record with microphones.

❹ PAD/MIC LIM (limiter) switch (ON/OFF)

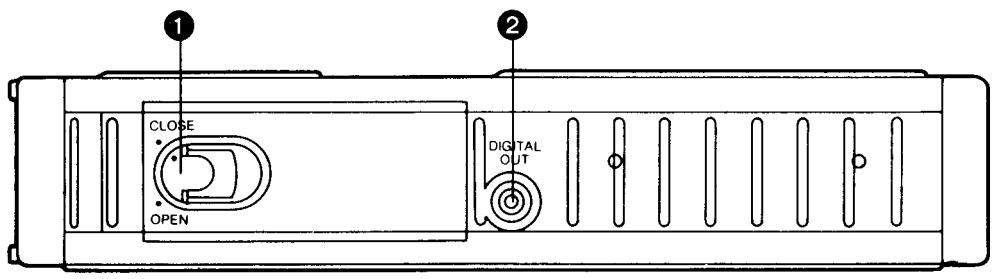
The PAD switch, when turned on, provides an extra 14 dB of attenuation which may be necessary when recording MIC or LINE sources with high output levels.

For microphones recording, the MIC LIM switch can be used with the PAD switch. The MIC LIM switch suppresses distortion caused by high volume sound bursts. The limiter circuit is activated only when there are sudden high power bursts and helps prevent distortion from getting into the recording.

❺ DC IN jack (DC IN 6V)

Connect the AC adaptor (included) to this jack for AC outlet use or to recharge the battery pack.

Rear panel



❶ Rechargeable battery OPEN/CLOSE knob

This knob turns the latch for opening and closing the battery compartment door.

❷ DIGITAL OUT terminal (DIGITAL OUT)

Terminal for digital output

Digital data output from the unit can be input into another device with the appropriate digital input terminals by means of the coaxial cable (included).

■ SV-260 DAT MAINTENANCE CHART

Regular Maintenance

The purpose of periodic maintenance as recommended is to keep the equipment in the best possible operating condition throughout its useful life.
Observance of this maintenance schedule ensures that maximum performance and reliability is obtained from the machine.

Regular maintenance is necessary because the DAT Recorder is a high-technology piece of equipment, containing DC motors, head cylinder assemblies, and a complex mechanism. These components deteriorate over time.
Dust and dirt can clog the head gap, which affects the sound.
In light of this, it is very important that overall maintenance be performed according to the maintenance chart to avoid problems resulting from heavy usage. Maintenance should also be performed after any repairs on the equipment.

Maintenance is particularly recommended for DAT Recorders used in commercial and broadcast applications for several reasons.
Installation and application are frequently under less than ideal conditions, such as long usage times and poor environmental conditions.
All of this adversely affects the life span and performance of the machine. Regular maintenance assures that the purchaser obtains maximum value for this expenditure.

SV-260 Maintenance Chart

Part Name	Part Number	Using Hours									
		500	1000	1500	2000	2500	3000	3500	4000	4500	5000
Cylinder Ass'y	VEG0504	○	●	○	●	○	●	○	●	○	●
Pinch Roller	1NB0001ZA	○	○	○	○	○	●	○	○	○	○
Roller Post	1DR0008ZA	○	○	○	○	○	○	○	●	○	○
Guide Post	1DR0009ZA	○	○	○	○	○	○	○	●	○	○
Tension Roller	RDR118ZA	○	○	○	○	○	○	○	●	○	○
Reel Table (R)	1DM0019ZA										●
Reel Table (L)	1DM0020ZA										●
Soft Brake Arm	1NL0050ZA								●		
Main Brake (B)	1NL0052ZA								●		
Main Brake (A)	1NL0051ZA								●		
Capstan Ass'y	1JQ0018ZA	○	○	○	○	○	○	○	○	○	●
Plate Spring (GND)	RUS740ZA										●
Main Gear	1NG0016ZA										●
FF Idler Gear	RNG86ZA										●
FF Int. Gear	RNG87ZA										●
Loading Cam Gear	RDR121ZA										●
Cam Gear	RNG88ZA										●
Lock Gear	1NG0012ZA										●
Lock Lever	1NL0058ZA										●
Mode SW	EVQWXC001								●		
Mode Motor	1JQ0019ZA								●		
Reel Gear	RNG85ZA										●

Part Name	Part Number	Using Hours									
		500	1000	1500	2000	2500	3000	3500	4000	4500	5000
Detector (L)	EVQWR1001										●
Detector (R)	EVQWR1002										●
Holder SW Open/Close	RSH1A91YA-A										●
Damper	RDG5935ZA										●
Holder Spring	RUD86ZA										●

● Replacement
○ Cleaning

DAT Head and Tape Transport Cleaning

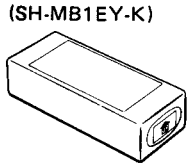
Through normal usage of any tape machine, dirt and debris from the tape accumlates on the heads, which eventually causes performance problems.
By using a cleaning cassette regularly, dirt buildup can be minimized, prolonging the life of the tape heads, and also keeping tape posts, tape guides, and the pinch roller clean.

DAILY CLEANING

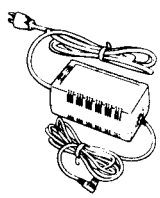
1. Play the cleaning cassette (Panasonic Part No. RT-RCLP) for 15-20 seconds once a day.
2. Do not use the same part of the cleaning tape more than once.

■ ACCESSORIES

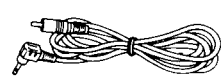
- Rechargeable battery pack .. 1 (SH-MB1EY-K)



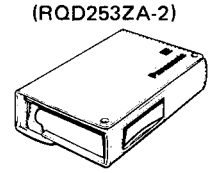
- AC adaptor 1
  (SH-MA1EY-K) . . . [E] area.
  (SH-MA1EBY-K) . . [EB] area.



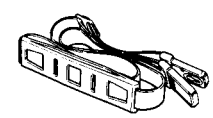
- Coaxial cable .. 1 (RJP0F33ZB-E)



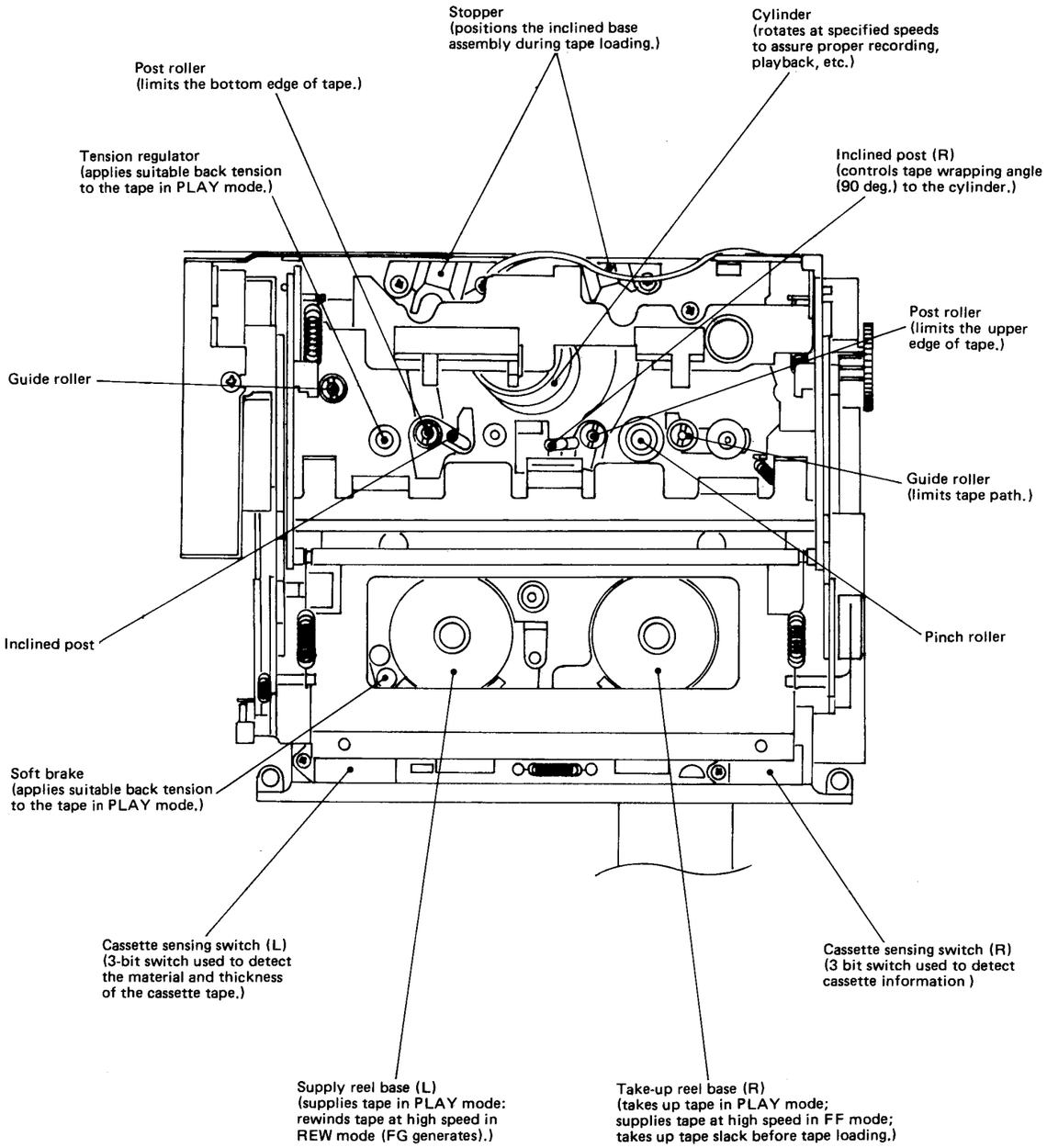
- Carrying case 1 (RQD253ZA-2)



- Carrying belt 1 (RQC9024ZA-0)



■ MECHANISM COMPONENT LAYOUT


Stopper
(positions the inclined base assembly during tape loading.)
Cylinder
(rotates at specified speeds to assure proper recording, playback, etc.)
Post roller
(limits the bottom edge of tape.)
Tension regulator
(applies suitable back tension to the tape in PLAY mode.)
Inclined post (R)
(controls tape wrapping angle (90 deg.) to the cylinder.)
Post roller
(limits the upper edge of tape.)
Guide roller
Guide roller
(limits tape path.)
Inclined post
Pinch roller
Soft brake
(applies suitable back tension to the tape in PLAY mode.)
Cassette sensing switch (L)
(3-bit switch used to detect the material and thickness of the cassette tape.)
Cassette sensing switch (R)
(3 bit switch used to detect cassette information)
Supply reel base (L)
(supplies tape in PLAY mode; rewinds tape at high speed in REW mode (FG generates).)
Take-up reel base (R)
(takes up tape in PLAY mode; supplies tape at high speed in FF mode; takes up tape slack before tape loading.)

■ DISASSEMBLY INSTRUCTIONS

"ATTENTION SERVICER"

Some chassis components may have sharp edges. Be careful when disassembling and servicing.

Ref. No. 1	How to remove the cabinet cover.

Procedure 1

1. Unscrew the 2 screws (❶ and ❷) and remove the cassette holder lid.
2. Unscrew the 5 screws (❸ ~ ❼) and pull the cabinet cover in the direction of the arrow.

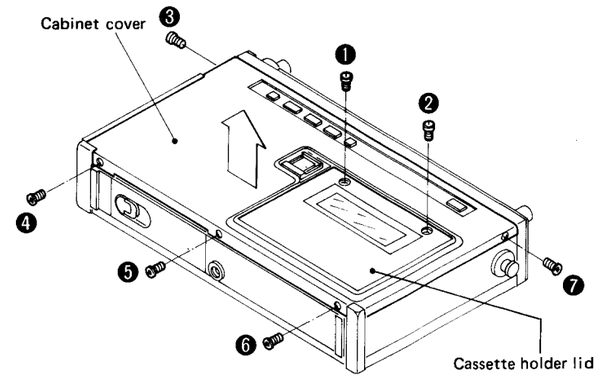


Fig. 1

Ref. No. 2	How to remove the front panel.

Procedure 2

1. Pull and remove the phones level knob, record level knob and knob holder.
2. Unscrew the 5 screws (❶ ~ ❺) and remove the front panel.

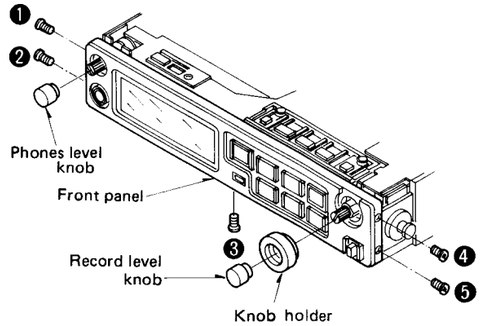
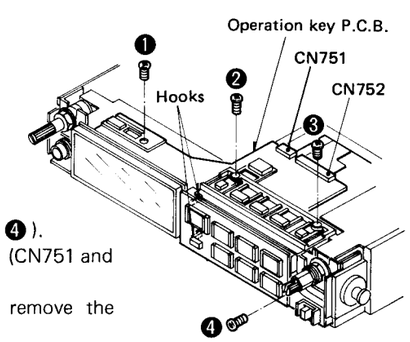


Fig. 2

Ref. No. 3	How to remove the operation key P.C.B.

Procedure 1→2→3

1. Unscrew the 4 screws (❶ ~ ❹).
2. Remove the 2 connectors (CN751 and CN752).
3. Release the 2 hooks and remove the operation key P.C.B.
4. Unscrew the 4 screws (❺ ~ ❽).



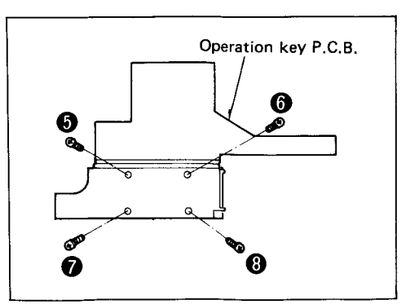


Fig. 3

Ref. No. 4 — How to remove the bottom cover.

Procedure 1→2→4

1. Unscrew the 3 screws (❶ ~ ❸) as shown in Fig. 4.
2. Unscrew the 8 screws (❹ ~ ⓫) as shown in Fig. 5.

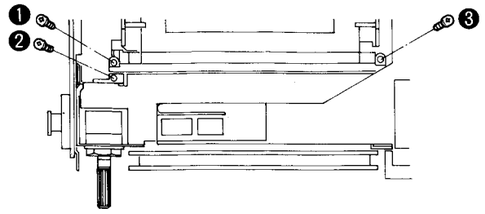


Fig. 4

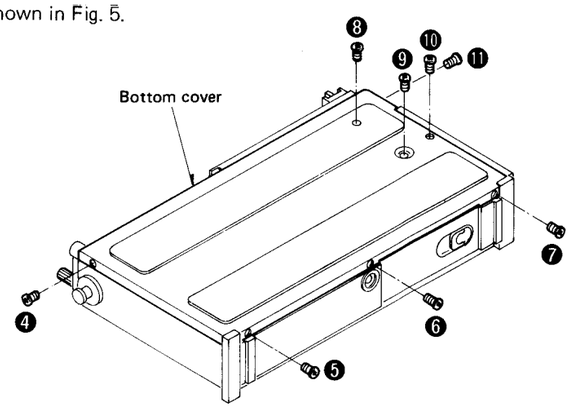


Fig. 5

Ref. No. 5 — How to remove the input/output P.C.B.

Procedure 1→2→3→4→5

Note: Before performing this procedure, remove the battery pack cover and battery pack as shown in Fig. 6.

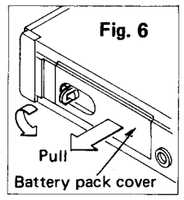


Fig. 6

1. Unscrew the 3 screws (❶ ~ ❸) and remove the connector cover.
2. Unscrew the 3 screws (❹ ~ ❻).

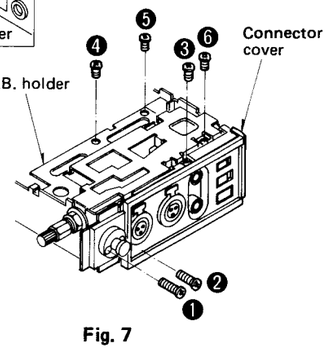


Fig. 7

Ref. No. 6 — How to remove the mechanical main unit.

Procedure 1→2→3→4→6

Note: Before performing this procedure, remove the battery pack cover and battery pack as shown in Fig. 6.

1. Remove the 2 flat cables from the 2 connectors (Ⓐ and Ⓑ).
2. Unscrew the 2 screws (❶ and ❷).
3. Unscrew the 6 screws (❸ ~ ❽).
4. Release the connector (Ⓒ) and remove the mechanical main unit.

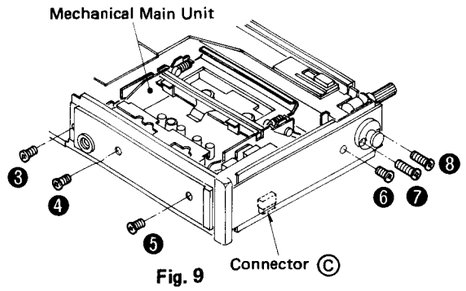


Fig. 9

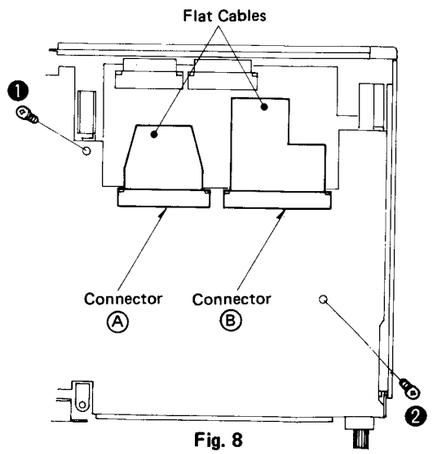


Fig. 8

Ref. No. 7 — How to remove the mechanism P.C.B. and the cylinder ass'y.

Procedure 6→7

1. Remove the mechanism ass'y.
2. Remove the 2 screws (❶, ❷) and remove the barrier angle board (Fig. 11).
3. Remove the 3 connection F.P.C. cords from the servo P.C.B. (Fig. 12).
4. Remove the spacer post and then remove the servo P.C.B. from the mechanism.
5. Remove the screw (❸) and remove the brush (Fig. 13).
6. Remove the magnet plate from the stator (Fig. 14).
   Note: Be careful not to damage the F.G. coil.

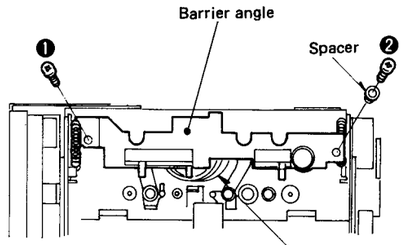


Fig. 11

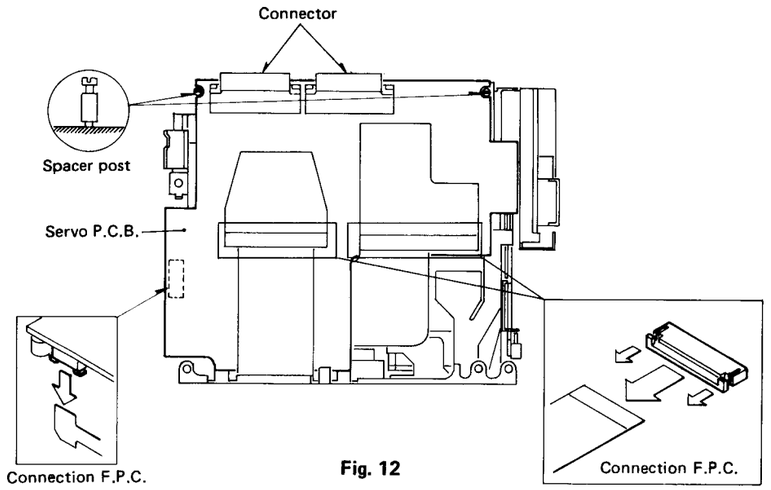


Fig. 12

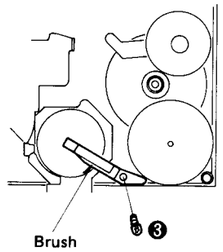


Fig. 13

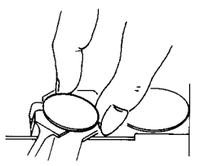


Fig. 14

7. Remove the 3 screws (❹ ~ ❻) and remove the F.G. coil ass'y (stator) from the mechanism base (Fig. 15).
8. Remove the 2 screws (❼ , ❽) and remove the stator housing from the mechanism base (Fig. 16).
9. With a hex wrench (0.71mm: HOZAN W-100), remove the 2 screws securing the rotor and the motor shaft (Fig. 17).
   Note: When reinstalling the 2 screws, alternately turn them until they are driven in place.

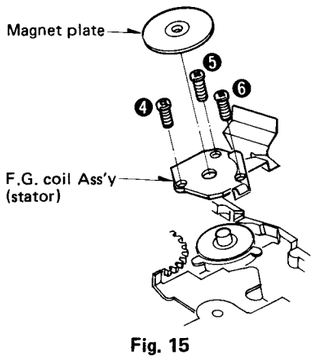


Fig. 15

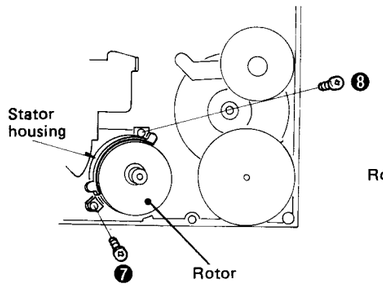


Fig. 16

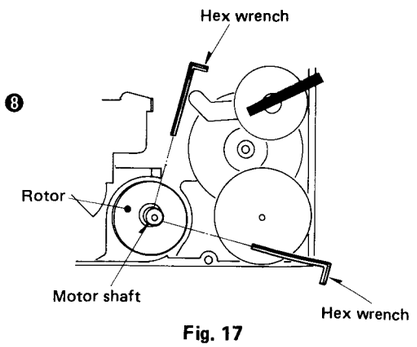


Fig. 17

10. Remove the 3 screws (❾ , ❿ , ⓫) and remove the cylinder (Fig. 18).
11. Remove the 3 screws (⓬ , ⓭ , ⓮) securing the cylinder (Fig. 18).
    Note: Gap filter spacer (RFE6031ZA) is installed in same units.
    Note: Spacer is installed under the mechanism base if this part is not thick enough. Please note that spacer is not installed in all units. Therefore, during ressembly make sure to reinstall the spacer in the unit in which they are installed.

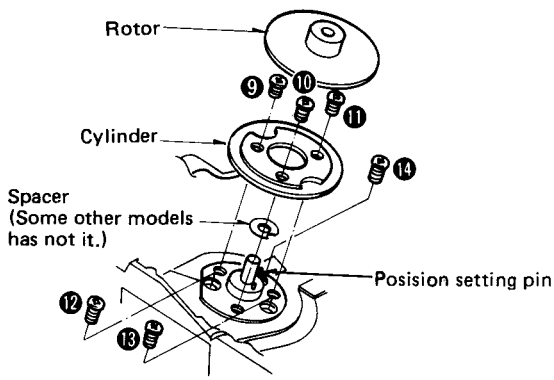


Fig. 18

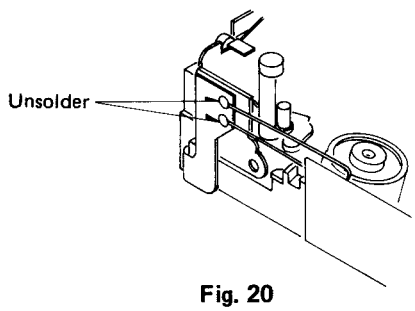


Fig. 20

12. Remove the solder and the 2 screws (⓯ , ⓰) from the RF P.C.B. shield case (Figs 19 ~ 21).

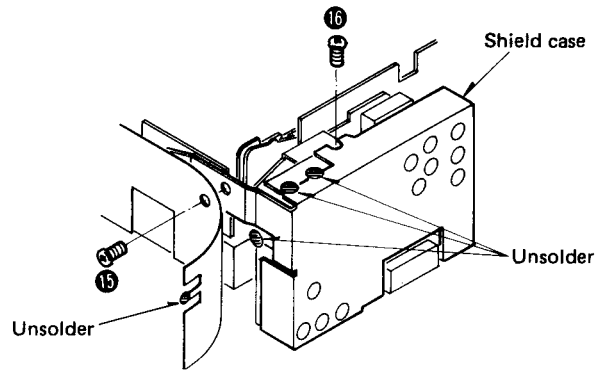


Fig. 19

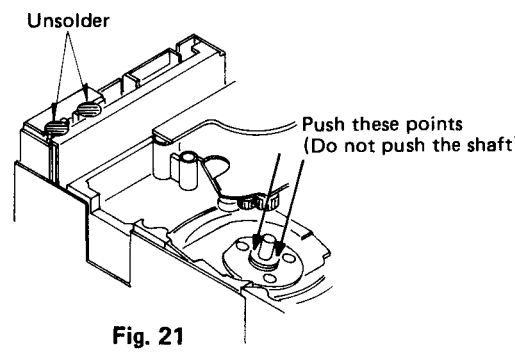


Fig. 21

13. Remove the RF P.C.B. shield case and then remove the cylinder head connection F.P.C. cord (Fig. 22).

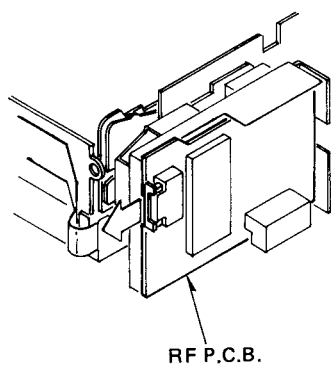


Fig. 22

14. Gently push down the cylinder resin to remove the cylinder ass'y from the mechanism base (Figs 21 and 23).
    Note: Do not touch the shaft when removing the cylinder ass'y.

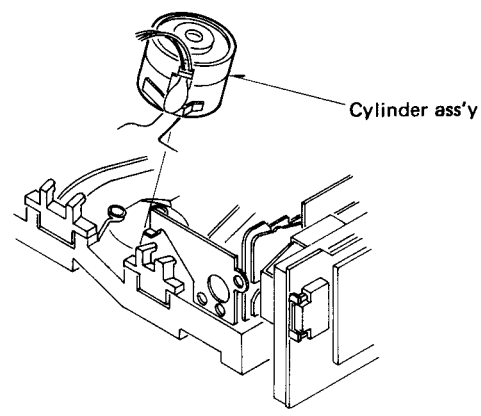
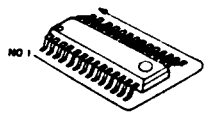
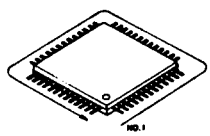


Fig. 23

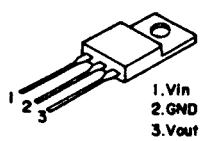
■TERMINAL GUIDE OF IC'S, TRANSISTORS AND DIODES



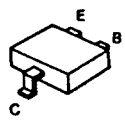
TC7S00FTX	5 Pin	MN74HC085	14 Pin	SVIPCM55HP	24 Pin
TC4S81FTX		MN74HC04S		SRM20256LM10	28 Pin
TC4S69FTX		MN74HC393S		MN86081	
TC4S01FTW	6 Pin	SN74LS624NS		AN8285S	
TL712CPS	8 Pin	UPD74HC164G		AN7031S	32 Pin
NJM4560MT		MN4066BS		AN7033S	
TK10681MT		MN4042BC	16 Pin	AN7030S	42 Pin
AN1393S		UPD4053BGT		AN7032S	
AN6612S		TA8401FST			
NJM4193MT		M5290FP			
NJM5532MT		LA4530MT	20 Pin		
AN4250S	10 Pin	UPD74HC273G			



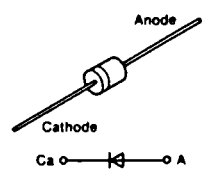
MN66181	42 Pin	MN52080SDE	64 Pin	SAQ0001-2	96 Pin
AN8320F	48 Pin	SAQ0003-1	80 Pin	UPD65031G241	100 Pin
MN15845RRF	64 Pin	SAQ0002-1	96 Pin	MN188322RRG	



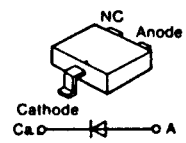
M5236MLT	3 Pin
SCI7700YTA	
SCI7710YBA	



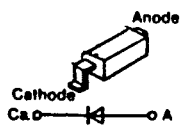
2SD1328TTW, 2SB970STW,
2SC3937TW, 2SB956RTW,
2SD1819STW, UN5219TW,
2SC3929TTW, UN5216TW,
2SC3931DTW, 2SD813RTW,
2SD1328STW, 2SD1819RTW,
UN5213TW, 2SB1219STW,
UN5113TW, 2SD1478RTW,
2SB1218STW, 2SB1219RTW,
2SD1820STW, 2SD1820RTW



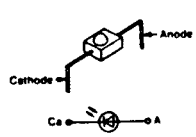
RVDERC81004V



MA141WKTW,
MA142WKTW,
MA151WA,
MA3033LTW,
MA3056MTW,
RVDRLS73
MA141WATW,
MA143TW,
MA157ATW,
MA3039LTW,
RVDFC52M,



MA701TW



LN1261CALTR

■ MEASUREMENTS AND ADJUSTMENTS

Equipment and Tools

- 2-channel 30 MHz oscilloscope (with external trigger and delay sweep) (with a 10 : 1 probe).
- Frequency counter
- DC power supply
- Digital voltmeter
- Standard test tape: RD-ER01, RD-PG01
- Blank tape for recording and playback (commercially available blank tape).

1. Equivalent Circuit Adjustment

1. Load the playback reference tape (RD-ER01) and operate the operation buttons so that the error rate is displayed in the tape counter display. (Refer to the "Error Rate Display Procedure" below.)
2. Turn **VR5**, **VR6**, **VR7** and **VR8** each a little at a time in order to adjust so that the error rate value decreases (the objective is an error rate value of 50 or below).

Error Rate Display Procedure

1. Switch on the power.
2. Load either the error rate measurement portion of the playback reference tape (RD-ER01) or a pre-recorded tape.
3. Press the LIGHT key.
4. Within 20 seconds of performing Step (3), simultaneously press the STOP + REW + SKIP FORWARD + SKIP BACKWARD keys.
5. While continuing to press the STOP key, release the other three keys.
6. Release the STOP key.
7. Press the PLAY key. (Playback of the tape will begin.)
   Performing the above procedure will cause the error rate to be displayed in the liquid crystal display.
   If skipping noise occurs or there are clicking noises during playback of a music tape, simple troubleshooting is possible in accordance with the error rate value displayed at that time as follows.

Possible Cause According to the Error Rate

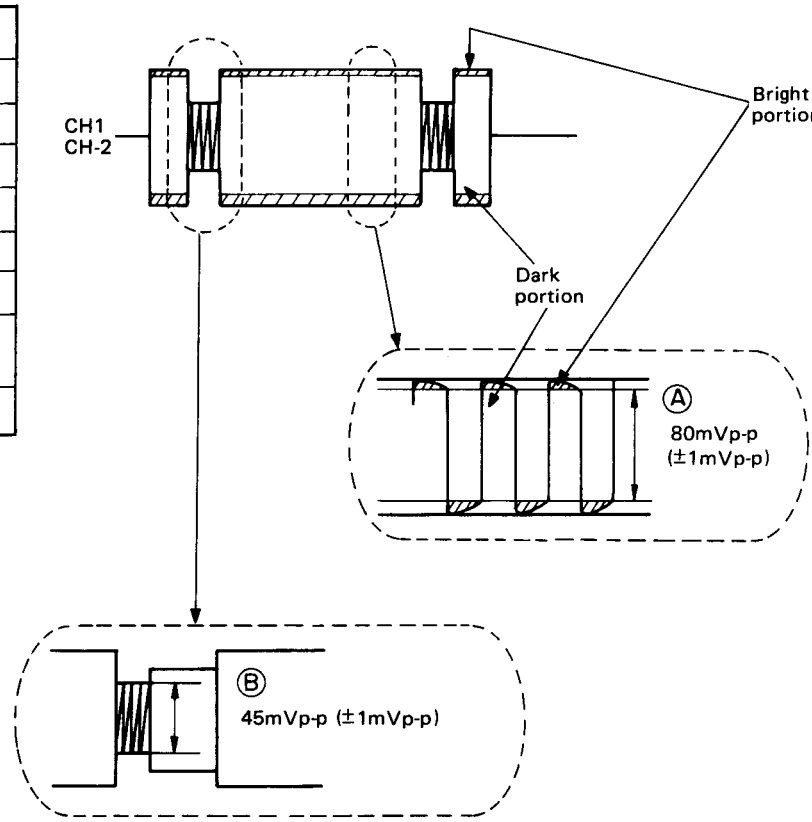
Error rate	Possible cause
0 ~ 1000	It can be assumed that there are no problems with the mechanism, heads, or tape transport. An incorrect adjustment or a malfunction in the amplifier circuit ban be suspected.
1001 ~ 5000	Clean the heads; refer to the Instruction Manual for the cleaning procedure. If the problem persists, a malfunction in the circuitry can be suspected.
5001 ~ 9999	Dirty or damaged heads can be suspected.

* To cancel the error rate display, either press the LIGHT key once again or switch off the power.

2. RF Recording Level Adjustment

1. Load a blank tape for recording and set the recorder for "REC-PLAY".
2. Set up the oscilloscope and connect as shown in the table below.

	CH-1	CH-2
Test Point	TP1	TP2
Volts/Div.	50 mV	5 mV
Time/Div.	5 msec.	
Delay	0.2 msec.	
Trig	–	
AC. GND. DC	AC	AC
Adjustment Point	**VR1, 2**	**VR1, 3**
GND	TP3	

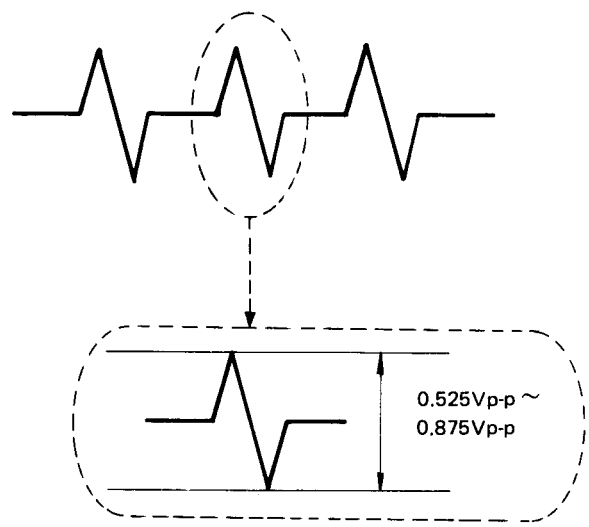


3. Set the delay time of the oscilloscope to 0.1 msec to enlarge the waveform. Adjust **VR2** (CH-1) and **VR3** (CH-2) so that Ⓑ in the figure is 45 mVp-p.
4. Next, adjust **VR1** so that Ⓐ in the figure is 80 mVp-p.

3. ATF Play Adjustment

1. Play the error rate measurement portion of the standard test tape (RD-ER01 : 2.35 MHz).
2. Set up the oscilloscope and connect as shown in the table below.

	CH-1 (CH-2)
Test Point	TP4 (CN J⑤ PIN)
Volts/Div.	1V
Time/Div.	0.2 msec.
Delay	—
Trig	—
AC. GND. DC	AC
Adjustment Point	**VR100**



3. After completing the settings, adjust **VR100** so that the amplitude of the waveform on the oscilloscope is within 0.525 to 0.875 Vp-p.

4. Adjustment of the battery check voltage

1. Connect **TP5** to ground. (**TP5** : IC610 ㉑ Pin).
2. Connect a DC power supply to the DC IN jack and connect a digital voltmeter to **TP6**.
3. Set the DC power supply so that the voltage of **TP6** is 5.40V ± 20 mV.
4. Switch on the power without loading a tape.
5. Adjust **VR601** so that the value displayed in the liquid crystal display is 121.
   Note: If the display will not remain constant at 121, adjust so that the value changes between 120 and 121.

5. Adjustment of the dew sensor

1. Connect a DC power supply to the DC IN jack and connect a digital voltmeter to **TP7**.
2. Set the DC power supply so that the voltage of **TP7** is 6 mV.
3. Adjust **VR651** so that the voltage of **TP8** is 3.54V ± 15 mV.

6. Adjustment of the loading time

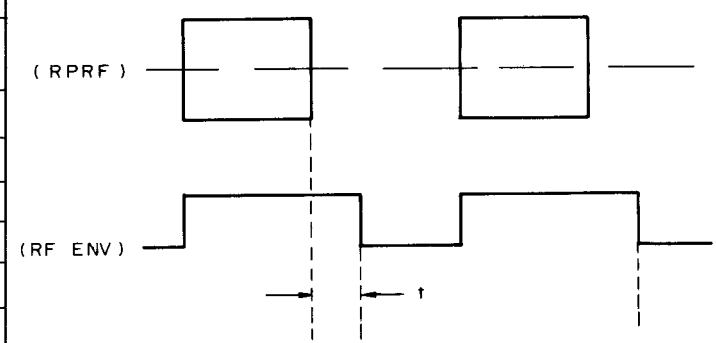
1. Insert a tape (no specific tape) and switch on the power so that the tape is loaded.
2. Use a stopwatch to measure the time from when the power is switched on to when the tape is loaded.
3. If the time is not within the specifications, turn **VR604** to adjust.

   Specification: 3.0 ± 0.2 sec.

7. Envelope Adjustment

1. Play the error rate measurement portion of the standard test tape (RD-ER01).
2. Set up the oscilloscope and connect as shown in the table below.

	CH-1	CH-2
Test Point	**TP9** (CN K② PIN)	**TP10** (CN K⑧ PIN)
Volts/Div.	50 mV	0.5 V
Time/Div.	2 msec.	
Delay	—	
Trig	CH-2	
AC. GND. DC	AC	DC
Adjustment Point	**VR101**	



3. Connect TP11 to TP12. (TP11 : CN K ⑪ PIN, TP12 : CN K ⑫ PIN)
4. Compare the RP RF and RF ENV waveforms on the oscilloscope screen and adjust **VR101** so that t = 1.5 ± 0.2 msec.
5. Repeat the short (ON) and remove (OFF) procedure of Step (3) to confirm that the changes in waveform t are within the specifications.
6. Disconnect the connections made in Step (3).

8. Adjustment of the offset voltage

1. Connect TP13 to TP14. (TP13 : CN I ⑫ PIN, TP14 : CN I ⑪ PIN)
2. Load the blank tape, set to REC PAUSE, and confirm that the indication of the meter indication are stable.
3. Adjust **VR551** so that the indication of the R CH level meter is within two dots.
4. Adjust **VR552** so that the indication of the L CH level meter is within two dots.
5. After completing the adjustment, remove the short between TP13 and TP14, and then confirm that indication of the meter segments are within two dots.

Note: * The lowermost two dots of the meters are always lit.
* The meter indications change in two-dot units.

(LEVEL METER)
LcH
RcH

9. Adjustment of the VCO

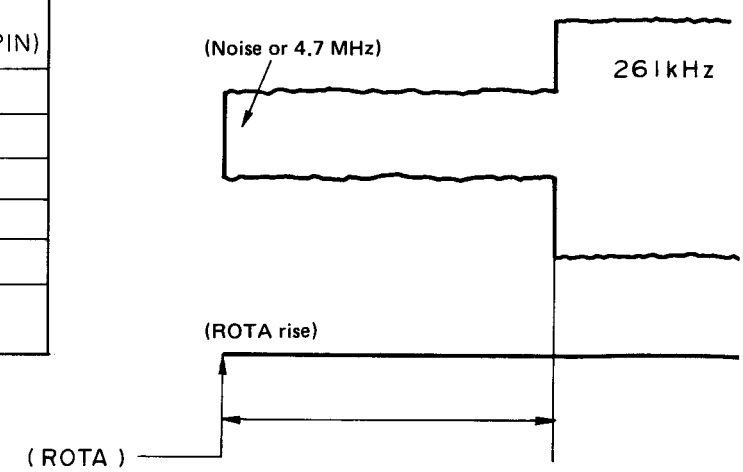
1. Connect the frequency counter to TP15
2. Set the power switch to ON mode.
3. While observing the frequency counter, adjust **VR102** so that the indication is 10 MHz.

Specification : 10 MHz ± 5 kHz

10. PG Phase Adjustment

1. Play the PG reference test tape (RD-PG01).
2. Set up the oscilloscope and connect as shown in the table below.

	CH-1	CH-2
Test Point	TP16 (CN J ③ PIN)	TP11 (CN K ⑪ PIN)
Volts/Div.	50 mV	0.5 V
Time/Div.	5 msec.	
Delay	0.1 μsec.	
Trig	CH-2	
AC. GND. DC	AC	DC
Adjustment Point	**VR801**	



3. While observing the waveform on the oscilloscope, adjust **VR801** so that t = double the set time +/— 30 μsec. (The set time is indicated on the back of the test tape).
   Note: The cassette setting time listed on the back of the test tape is based on a head cylinder diameter of 30mm. Since the SV-260 head cylinder is 15mm, it must be adjusted to double the setting time.
   Example: For a cassette setting time of 0.192 msec, adjust the PG phase to a time of 0.384 msec.

11. Power Supply Adjustment

11-1. Adjustment of the system control power supply

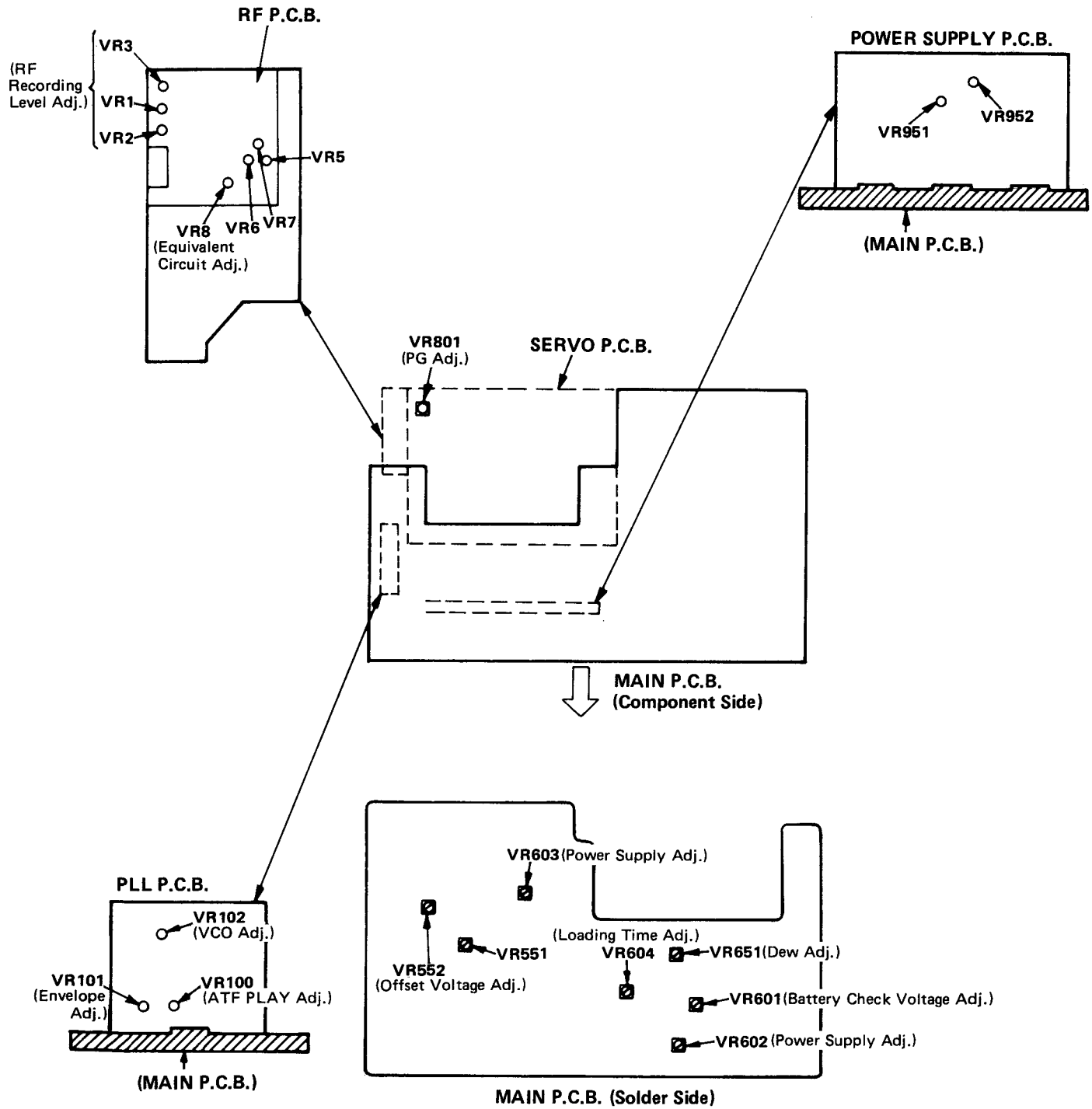
1. Connect the digital voltmeter to **TP18**.
2. Connect a DC power supply to the DC IN jack. (DC6.5V)
3. Set the power switch to ON mode.
4. Adjust **VR602** so that the voltage at the test point above is 5V.

11-2. Adjustment of the signal processing power supply

1. Connect the digital voltmeter to **TP19**.
2. Connect a DC power supply to the DC IN jack. (DC6.5V)
3. Set the power switch to ON mode.
4. Adjust **VR603** so that the voltage at the test point above is 5V.

■ LOCATION OF ADJUSTMENT POINTS

* Please refer to Printed Circuit Board for test point locations. (See page 63 ~ 72).



■ TERMINAL FUNCTION OF IC

- **IC402 (SAQ0002-1) : DEM**

Pin No.	Mark	I/O	Function
1	DIG-1	I	This terminal inputs the digital signal.
2	SIDSH	I	This terminal inputs the shift clock signal for the sub-code ID.
3	SIDDA	I/O	This terminal inputs and outputs the serial data for sub-code ID.
4	MID-S	I	This terminal inputs the shift clock signal for the main ID.
5	MID-D	I/O	This terminal inputs and outputs the serial data for the main ID data.
6	MICONW	I	Not used.
7	MICONR	I	Not used.
8 ∫ 11	PD0 ∫ PD3	I/O	These are buses of the PACK data for the computer.
12	GND	I	For ground connection
13 ∫ 16	PD4 ∫ PD7	I/O	These are buses of the PACK data for the computer.
17 ∫ 26	ADR0 ∫ ADR9	O	Not used.
27	R-WE	O	
28	R-OE	O	
29	NC	–	No connection
30 ∫ 37	MD7 ∫ MD0	I/O	These are buses of the sub-code RAM.
38	GND	I	For ground connection
39	CIFLAG	I	This terminal inputs the C1 flag for calculating error rate.
40 ∫ 47	IDB7 ∫ IDB0	I	These are internal buses of ECC.
48	ORB	I	Not used.
49	ORA	I	This terminal inputs the latch pulse of output port A.
50	NEXTP	I	Inputs the next page increment signal for calculating the syndrome of the sub-code.
51	SND-S	I	Inputs a signal for starting the syndrome calculating for the sub-code.
52	DIRQT	O	Outputs the data of the main ID during recording. Outputs the writing request signal of the demodulated data during playback.
53	DEMDAT	O	Outputs a signal to latch calculated syndrome results for the sub-code during recording. Outputs the demodulated data of pins 8 ~ 10 during playback.
54	DREST	O	Outputs a signal to clear the register for the syndrome calculation of the sub-code during recording. Outputs a signal to clear the data symbol counter in the block during playback.
55	ADLOAD	O	Outputs a signal to reset the ECC address counter of the sub-code during recording. Outputs a signal to load the block number of the playing data during playback.
56	MLACH	O	Outputs the clock signal for syndrome calculation of the sub-code during recording. Outputs the latch clock signal of 8 bits of playing data during playback.

Pin No.	Mark	I/O	Function
57	DCP	O	Outputs the shift clock signal of the main ID during recording. Outputs the shift clock signal of the playing data during playback.
58	CDCP	O	Outputs the data of the digital IN during recording. Outputs the shift clock signal of ID code during playback.
59	Vcc	I	For connection to +5V.
60	GND	I	For ground connection.
61	TEST	I	Inputs the control signal of external access to the sub-code RAM.
62	PCMMAD	I	Inputs the window signal to calculate C1 of the sub-code.
63	SUBOE	I	Input the latch signals of sub-code datas SD7 ~ SD0 during recording.
64 ∫ 71	SD7 ∫ SD0	O	These are data buses of the sub-code (LSB ~ MSB).
72	DEMCOD	I	Inputs the NPZI-demodulated playback signal by PLL.
73	PLCP	I	Input the shift clock signal of the DEM code.
74	D-DATA	I	Inputs the data for D/A.
75	D-SIFT	O	Outputs the shift clock signals for D/A and A/D.
76	D-LOAD	O	Outputs the load clock signals for D/A and A/D.
77	LR2	O	Outputs the double-length clock signal of L/R channels (96 kHz).
78	LSRR	O	Outputs the switching signal of L or R channel (48 kHz). At "High" level ..... left channel At "Low" level ..... right channel
79	LR4	O	Not used.
80	D-FLAG	I/O	This terminal is for output and input of the error flag of digital signal.
81	H-SW	I	Inputs the PG of the drum.
82	FS-SIF	I	Inputs the shift clock signal of the FS-DAT.
83	FS-SYN	I	For identification of the FS-DAT. At "Low" level ..... Control data At "High" level ..... Level meter data
84	FS-DAT	I/O	Inputs the control data (recording or playback and so on) and outputs the level meter data.
85	GND	I	For ground connection.
86	CXAI	I/O	Crystal terminal (12.188MHz)
87	CXAO		
88	CXBI	I/O	Crystal terminal (11.2896 MHz)
89	CXBO		
90	VCOIN	I	Not used.
91	VCOA	O	Not used.
92	VCOB	O	Not used.
93	DIG-O	O	Outputs the digital signal.
94	FRAME	O	Not used.
95	MSYNC	O	Outputs the synchronous detection signal of the playback signal.
96	IDP	O	Outputs a signal for the parity check of the ID code.

• IC403 (SAQ0001-2) : DSP

Pin No.	Mark	I/O	Function
1 ~ 8	SD0 ~ SD7	I	Inputs the data of the sub-code.
9	SUBOE	O	Outputs the latch clock signal of the sub-code data.
10	SUBMAD	O	Outputs the window signal to calculate C1 of the sub-code.
11	FCH	O	Output a signal of 9.408 MHz.
12	GND	I	For ground connection.
13	CDCP	I	Inputs the digital data during recording. Inputs the shift clock signal of the ID code during playback.
14	DCP	I	Inputs the shift clock signal of the main ID during recording. Inputs the shift clock signal of the playing data during playback.
15	ADRLOA	I	This is a block address and inputs the load signal of the ID code.
16	DEMDAT	I	Outputs the serial data of 8 bits of playing data.
17	DIRQT	I	Inputs the serial data of the main ID during recording. Inputs the write request signal of the playing data.
18 ~ 25	IDB7 ~ IDB0	I	These are internal buses of ECC (LSB ~ MSB).
26 ~ 33	DB7 ~ DB0	I/O	Data buses (LSB ~ MSB).
34	ORBCP	I	Inputs the latch clock signal of ECC output port B.
35	ORACP	I	Inputs the latch clock signal of ECC output port A.
36	WRQT	I	Inputs the write request signal from the GLU.
37	RRQT	I	Inputs the read request signal from the GLU.
38	GND	I	For ground connection.
39	TEST	I	This is the terminal for IC test. Normally this is for ground connection.
40	NEXT	I	For syndrome calculation. Inputs the page increment signal.
41	SNDSTT	I	Inputs a signal to start syndrome calculation.
42	PQKIR	O	Outputs the switching signals of the C1 and C2.
43	MUTEIN	I	Inputs the muting signal of the digital data.
44	GLUR	O	Outputs a signal to reset the ECC program counter.
45	HFCH	O	Outputs the system clock signal of the ECC.
46	SSHIF	O	Outputs the clock signal for the syndrome calculation.
47	SLATCH	O	Outputs the latch clock signal for the results of the syndrome calculation.
48	PQRST	O	Outputs the reset pulse of the syndrome register.
49	INACP	O	Outputs the latch signal for input port A.
50 ~ 58	A0 ~ A8	O	These are the output terminals for memory addresses.

Pin No.	Mark	I/O	Function
59	Vcc	I	To be connected to +5V.
60	GND	I	For ground connection.
61	RAMWE	O	Outputs the write enable signal for memory.
62 ~ 64	A9 ~ A11	O	These are the output terminals for memory addresses.
65	RAMOE	O	Outputs the output enable signal for memory.
66	A12	O	These are output terminals for memory addresses.
67	A13	O	
68	VCOPL	I	Not used.
69	PLL4	O	
70	PLL3	O	Not used.
71	PLL2	O	
72	PLL1	O	
73	PLLD	O	Not used.
74	PLLC	I	
75	EXOR	O	Outputs the PLL phase comparison signal for the master clock.
76	CK28M	I	Inputs a signal of 28.224 MHz generated by PLL.
77	HEACH	O	Not used.
78	PBSG	I	Not used.
79	RCSG	O	Outputs the recording signal.
80	TSCK	O	Outputs the drum PG synchronization signal of 33.33 Hz.
81	LEVDA	I/O	Inputs the serial control data and outputs the serial level meter data.
82	LEVSY	I	Inputs the enable signal of the control data.
83	LEVSF	I	Inputs the shift clock signal of the control data.
84	HSW	I	Inputs the drum PG signal.
85	GND	I	For ground connection.
86	ATFMAD	O	Outputs the ATF ID signal of 130 kHz.
87	SEGCP	O	Outputs the segment clock signal of 66.66 Hz.
88	DFLAG	I/O	This is the terminal for error flag of digital signal.
89	MUTE	O	Not used.
90	ADDAT	I	Inputs the A/D data.
91	LR	I	Outputs the switching signal to L or R channel.
92	DLOAD	I	Outputs the data load clock signals for D/A and A/D.
93	DSIFT	I	Outputs the data shift clock signals for D/A and A/D.
94	DADAT	O	Outputs the D/A data.
95	PLLCP	O	Not used.
96	DEMCOD	O	

• IC404 (SAQ0003-1) : ECC

Pin No.	Mark	I/O	Function
1 ∫ 8	IDB0 ∫ IDB7	I/O	These are for ECC internal busses (LBS ~ MSB).
9	GND	I	For ground connection.
10	GND		
11	NC	–	No connection.
12	S-RST	I	This is the input terminal to reset the program counter of the sub-code.
13	S-DF1	I	Inputs the done flag 1 signal of the sub-code.
14	S-DF2	I	Inputs the done flag 2 signal of the sub-code.
15	S-CLR	I	This is the input terminal to clear the syndrome register of the sub-code.
16	S-LACT	I	Inputs the latch clock signal for the results of the syndrome calculation of the sub-code.
17	S-SCLK	I	Inputs the clock signal for syndrome calculation of the sub-code.
18 ∫ 25	SDB0 ∫ SDB7	I	Input the sub-code data (not used).
26	SST1	O	For output of the ST-1 signal of the sub-code (not used).
27 ∫ 30	TD0 ∫ TD3	O	For output test (not used).
31 ∫ 38	TD4 ∫ TD11	O	For output test (not used).
39	TEST	O	For IC test (these are normally for ground connection).
40	TDS-A		
41	TDS-B		
42	NC	–	Not used.
43	IBS-A	O	For output test of the internal bus select signal (not used).
44	IBS-B		
45	IBS-C		
46	IBS-D		
47	IBS-E		
48	PQ2	I	Inputs the recording and playback signals.
49	Vcc	I	To be connected to +5V.
50	GND	I	For ground connection.
51	GND		
52	SUB1	I	Inputs the select signal of the sub code.
53	SUB2	I	Normally to be connected to +5V or for input of the select signal of the sub-code.
54	PQ1	I	Inputs C1 area signal of the sub-code.
55	PG	I	Normally to be connected to +5V or for input the gate control signal for the parity calculation.
56	INA-CP	I	Inputs the latch pulse to input port A.
57	CLR	I	This is the input terminal to reset the register for the syndrome calculation.
58	LATC	I	Inputs the latch signal for the results of the syndrome calculation.
59	SCLK	I	Inputs the clock signal for the syndrome calulation.
60	CK	I	Inputs the system clock signal.
61	RST	I	This is the input terminal to reset the ECC program counter.
62	DF-1	I	Inputs the termination signal of the syndrome calculation.
63	DF-2	I	Inputs the C1 and C2 switching signals.
64	ST0	O	This is the output terminal to start the syndrome calculation.
65	ST1	O	This is the output terminal for the page increment of the syndrome calculation.
66	ST2	O	Outputs the memory read request signal.
67	ST3	O	Outputs the memory write request signal.
68	ST4	–	Not used.
69	ST5	O	Outputs the results of C1 check.
70	ORA	O	Outputs the latch clock signal of output port A.
71	ORB	O	Outputs the latch clock signal of output port B.
72	ORC	O	Outputs the latch clock signal of output port C (not used).
73 ~ 80	DB0 ~ DB7	I	Input the data of LSB ~ MSB.

• IC502 (MN66181) : Digital Filter

Pin No.	Mark	I/O	Function
1	———	–	———
2	D012	O	16-bit parallel data output.
3	D011/SCK	O	16-bit parallel data output/serial output bit clock.
4	D010/SOUT	O	16-bit parallel data output/serial output data.
5	GND	I	GND terminal.
6	D09	O	16-bit parallel data.
7	———	–	———
8	D08	O	16-bit parallel data.
9	D07	O	16-bit parallel data.
10	———	–	———
11	———	–	———
12	D06	O	16-bit parallel data.
13	D05	O	16-bit parallel data.

Pin No.	Mark	I/O	Function
14	D04	O	16-bit parallel data.
15	D03/2RLCK	O	16-bit parallel data/RL signal.
16	———	–	———
17	———	–	———
18	D02/WCK	O	16-bit parallel data/serial output word clock.
19	D01	O	16-bit parallel data.
20	D00	O	16-bit parallel data (LSB)
21	MDATA	I	Command data input.
22	———	–	———
23	MCLK	I	Command clock input.
24	MLD	I	Command load input.
25	———	–	———
26	$\overline{RST}$	I	Reset signal input (reset at "L").
27	VDD	I	Power supply (connected to +5V). (not used).
28	LRCK	I	R/L signal.
29	———	–	———
30	SFT	I	Serial data input clock.
31	SIN	I	Serial data input.
32	———	–	———
33	X OUT	O	Clock output (Not used).
34	X IN	I	Clock input (16.9344 MHz).
35	OSEL	I	DA output parallel/serial selection. (Parallel at "L")
36	LDGL	O	L channel deglitch signal (not used).
37	RDGL	O	R channel deglitch signal (not used).
38	VDD	I	Power supply (connected to +5V).
39	D015	O	16-bit parallel data (MSB).
40	D014	O	16-bit parallel data.
41	———	–	———
42	D013	O	16-bit parallel data.

• IC610 (MN188322RRG) : SYSTEM CONTROL

Pin No.	Mark	I/O	Function
1	COBUS5	O	Outputs the digital mute signal.
2	COBUS4	O	Outputs the digital emphasis signal.
3	COBUS3	O	Outputs the digital copy inhibit signal.
4	COBUS2	O	Outputs the head mask signal.
5	COBUS1	O	Outputs the D/A mute signal.
6	COBUS0	O	Outputs the rec mute signal.
7	NCYLOK	I	Inputs the capstan lock signal.
8	NCYLOK	I	Inputs the cylinder lock signal.
9	CAPER	I	Inputs commands for the rotation direction of the capstan (not used).
10	TRK	I	Inputs the ATF synchronization data.
11	HSW	I	Inputs the head switching signal.
12	NDCIN1	I	DC IN power supply detection signal.
13	NDCIN2	I	
14	MECAKEY	I	Not used.
15	PPRDY	I	Inputs the ready signal from the panel control.
16	BLKB	I	Inputs the signal that detects the signalless mode.
17	ENVL	I	Inputs the RF envelope signal.
18	ROT	I	Inputs the ROT signal.
19	———	–	———
20	———	–	———
21	TESTAD	I	This is the test terminal.
22	NDEW	I	Inputs the detection signal for the dew condensation.
23	EXI	I	Connected to GND.
24	EXO	O	Not used. (open)
25	NRST	I	Inputs the reset signal.
26	TAPLED	O	Outputs the signal for tape end and beginning detection LED display.
27	MDML	O	Outputs the mode motor load signal.
28	MDMUL	O	Output the mode motor un-load signal.
29	SOL	O	Outputs the solenoid drive signal.
30	TP	O	Outputs the track pitch signal (not used).
31	PREC	O	Outputs the ATF shift servo signal.
32	KLIMIT	O	Outputs the limiter switching signal (not used).
33	PPSTB	O	Outputs the strobe signal from the panel control.
34	NRDY	I	For input test (normally for ground connection.)
35	7MCK	I	Clock OSC terminal 1.
36	OSC2	O	

Pin No.	Mark	I/O	Function
37	Vss	I	For ground connection.
38	X1	I	Not used.
39	X0	O	
40	VDD	I	To be connected to +5V.
41	IRQ2	I	Not used.
42	RLFGTU	I	Inputs the FG pulse of the take-up reel.
43	RLFGSU	I	Inputs the FG pulse of the supply reel.
44 ≀ 48	TPHL1 ≀ TPHL5	I	Inputs the tape hole detection signal.
49 ≀ 51	MMOD2 ≀ MMOD0	I	Inputs the tape mode switching signal.
52	HOLDSW	I	Inputs the cassette holder lock detection signal.
53	CDSW	I	Inputs the cassette detection signal.
54	TAPBA	I	Inputs the tape beginning detection signal.
55	TAPEA	I	Inputs the tape end detection signal.
56	TRCLK	I/O	Inputs and outputs the clock signal of the serial data.
57	RXDT	I	Inputs the serial data.
58	TXDT	O	Outputs the serial data.
59	DISPSF	O	Outputs the LED shift signal.
60	DISPRST	O	Outputs the reset signal. (Not used).
61	NSTBY	O	Outputs the stand-by signal.
62	HOOK	O	Outputs the data of the PCM playback.
63	PLLDT	I	Inputs the PLL serial data.
64	LEVDT	I/O	For input and output of the LEVEL/SYSTEM data.
65	SIDDT	I/O	Input and output of the SUB ID serial data.
66	MIDDT	I/O	Input and output of the PCM ID serial data.
67	LIGHT	O	Outputs the LCD display control signal.
68	BLEV1	O	Outputs the switching signal of the non-recorded segment level.
69	NREW	O	Outputs signals to control the rotation speed. (Not used).
70	MODSET	O	Outputs the data for LED display.
71	SER	O	Outputs signal to control direction of mode (FF/REW).
72	FLGSF	O	Outputs the flag counter shift pulse. (Not used).
73	FLGDT	O	Outputs the flag counter serial data. (Not used).
74	DSCP	O	Outputs the muting latch pulse.
75	LEVSYS	O	Outputs the switching signal level and system data.
76	LEVSF	O	Outputs the LEVEL/SYSTEM data shift clock pulse.
77	PLLSF	O	Outputs the PLL shift clock pulse.

Pin No.	Mark	I/O	Function
78	SIDSF	O	Outputs the SUB ID shift clock pulse.
79	MIDSF	O	Outputs the PCM ID shift clock pulse.
80	———	—	———
81	MICATT	O	Outputs the mic attenuator switching signal. (Not used).
82	ARNP	O	Outputs the recording/playback switch signal of the amplifier.
83	DEEMP	O	Outputs the deemphasis switching signal.
84	SELSG	O	Outputs the LINE/MIC switching signal. (Not used).
85	NSGMUTE	O	Outputs the muting signal.
86	ALVC	O	Outputs the digital power supply control signal.
87	RST2	O	Outputs the resets signal.
88	D5SYS	I	To be connected to +5V.
89	D5SYS	I	This is the input terminal for the power supply of A/D converter circuit.
90	GND	I	For ground connection.
91	ADREF	I	This is the input terminal to set the standard voltage.
92 ≀ 94	NC	—	Not used. (connected to GND)
95	BATIN	I	This is the input test terminal to battery check.
96	SHC	O	This is the output terminal for A/D sample hold capacitor.
97	Vss	I	For ground connection.
98	AVss		
99	CAPSL	O	Outputs the latch signal for the capstan servo.
100	RELSL	O	Outputs the latch signal for the reel servo.

• IC701 (MN15845RRF) : PANEL CONTROL

Pin No.	Mark	I/O	Function
1	VDD	I	To be connected to +5V.
2	OSC1	I	Clock OSC terminal (3.0 MHz)
3	OSC2	O	
4	XI	I	Not used.
5	XO	O	
6	NRST	I	Inputs the reset signal.
7	SYNC	O	Outputs the synchronizing signal. (Not used).
8	IRQ	I	Inputs the test terminal.
9	SIRQ	I	Not used.
10	TXDT	I	Inputs the serial data.
11	RXDT	O	Outputs the serial data.

Pin No.	Mark	I/O	Function
12	TRCLK	I/O	Inputs and outputs the clock signal of the serial data.
13	PPSTB	I	Inputs the strobe signal.
14	DNCIN	I	Inputs the DC IN power supply detection signal.
15	DCOFF	I	Inputs the DC power supply off detection signal.
16	TEST	I	This is the test terminal.
17	KPAD	I	Inputs the PAD switch signal. (Not used).
18	KTIMER	I	Inputs the timer switching signal. (Not used).
19	KMIC	I	Inputs the LINE/MIC switching signal. (Not used).
20	KLIMIT	I	Inputs the limiter switching signal. (Not used).
21 ~ 24	KR0 ~ KR3	I	Input the key-return signal.
25 ~ 28	KS0 ~ KS3	O	Output the key-scan signal.
29	RST1	O	Outputs the reset signal for the system control.
30	PPRDY	O	Outputs the ready signal.
31	RLYOFF	O	Outputs the relay off mode signal.
32	RLYON	O	Outputs the relay on mode signal.
33 ~ 35	VLCD1 ~ VLCD3	I	Inputs the bias voltage for LCD (display tube).
36 ~ 39	COM0 ~ COM3	O	Outputs the common signal for the LCD (display tube).
40 ~ 63	SEG0 ~ SEG23	O	Outputs the segment signal for the LCD (display tube).
64	GND	–	For ground connection.

• IC801 (MN52080SDE) : MAIN SERVO

Pin No.	Mark	I/O	Function
1	Vss	I	For ground connection.
2	X1	–	Not used.
3	SVCLK	I	Inputs the system clock signal of 9.408 MHz.
4	RQT	I	Inputs the RQT of 66.66 Hz.
5	SVSYNC	I	Inputs the synchronizing signal.
6	NROTSW	O	Not used.
7	NTSTEM	–	Not used.
8	VDD	I	To be connected to +5V.
9	Vss	I	For ground connection.
10	COBUS 0	I	Inputs the rec mute signal.

Pin No.	Mark	I/O	Function
11	COBUS 1	I	Inputs the D/A mute signal.
12	COBUS 2	I	Inputs the head mask signal.
13	COBUS 3	I	Inputs the digital copy inhibit signal.
14	COBUS 4	I	Inputs the digital emphasis signal.
15	COBUS 5	I	Inputs the digital mute signal.
16	VDD	I	To be connected to +5V.
17	Vss	I	For ground connection.
18	CAPSL	I	Inputs the latch signal for the capstan servo.
19	RELSL	I	Inputs the latch signal for the reel servo.
20	NSTBY	I	Inputs the stand-by signal.
21	NRST2	I	Inputs the resete signal.
22	HOOK	I	Inputs the data of the PCM playback.
23	A	O	Outputs the capstan motor control signal.
24	Vss	I	For ground connection.
25	VDD	I	To be connected to +5V.
26	CAPFG	I	Inputs the capstan FG signal.
27	RLFGS	I	Inputs the supply reel FG signal.
28	RLFGT	I	Inputs the take up reel FG signal.
29	CYLFG	I	Inputs the cylinder FG signal.
30	CYLPG	I	Inputs the cylinder PG signal.
31	B	–	Not used.
32	VDD	I	To be connected to +5V.
33	Vss	I	For ground connection.
34	CYLED	O	Outputs the command for the rotation direction of the cylinder.
35	CAPED	O	Outputs the command for the rotation direction of the capstan motor.
36	Rcc	O	Outputs the capstan motor switching signal.
37	TL	O	Outputs the torque limit signal of the capstan motor.
38	CAPD	O	Outputs the capstan motor drive.
39	CYLD	O	Outputs the cylinder drive.
40	Vss	I	For ground connection.
41	VDD	I	To be connected to +5V.
42	FIL	O	Outputs the control signal for capstan motor driving.
43	ATF ON	O	This is the output terminal to connect with the ATF circuit.
44	SP1	O	Outputs the sample hold control signal.
45	SP2	O	
46	C	O	Outputs the capstan motor control signal.

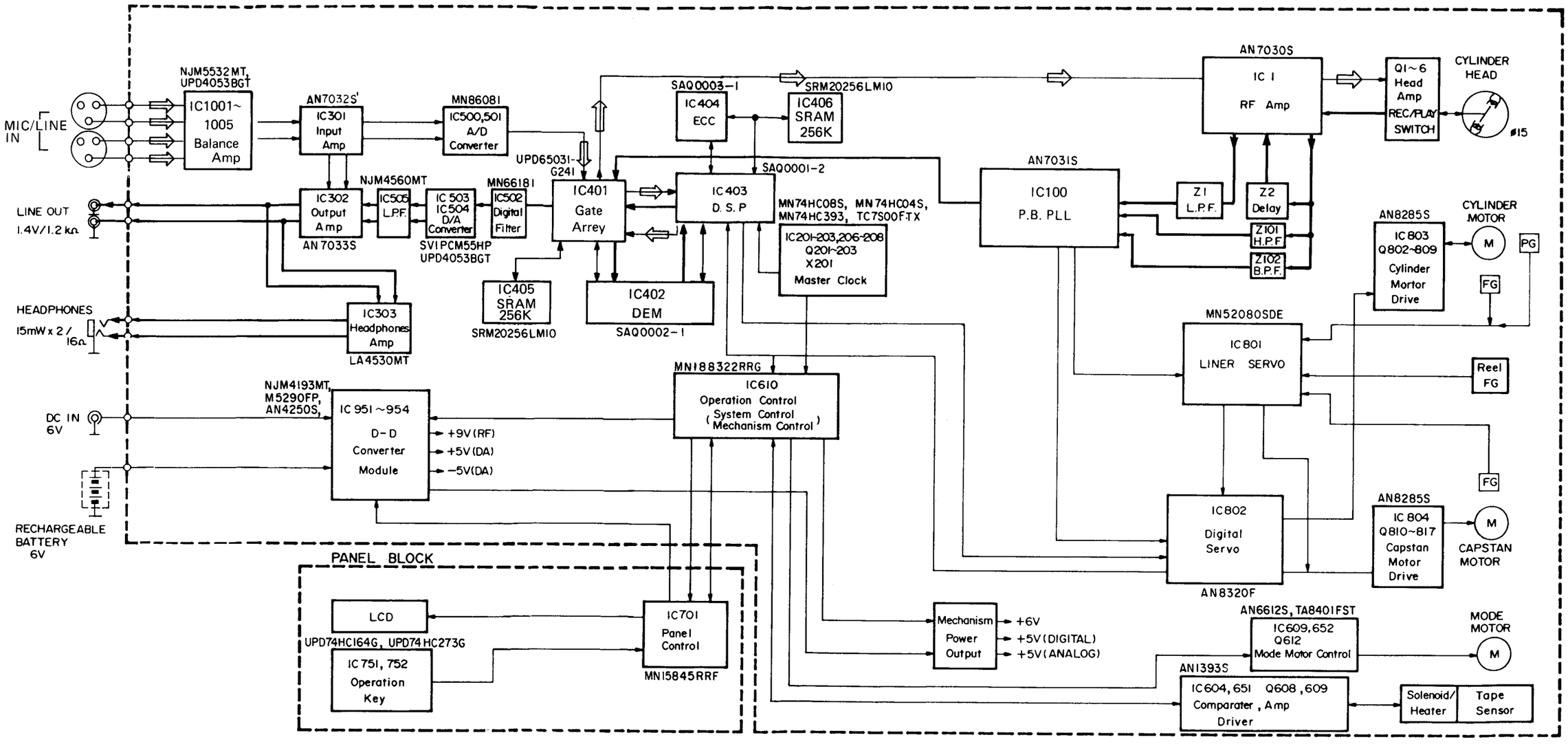
Pin No.	Mark	I/O	Function
47	SPE	O	Outputs the sample hold control signal.
48	VDD	I	To be connected to +5V.
49	Vss	I	For ground connection.
50	ATFWND	O	Outputs the data of the ATF area.
51	NCAPOK	O	Outputs the capstan lock signal.
52	NCYLOK	O	Outputs the cylinder lock signal.
53	RLFGTU	O	Outputs the FG pulse of the take-up reel.
54	RLFGSU	O	Outputs the FG pulse of the supply reel.
55	TRK	O	Outputs the ATF synchronization data.
56	VDD	I	To be connected to +5V.
57	Vss	I	For ground connection.
58	HSW	O	Outputs the head switching signal.
59	NRTRST	—	Not used.
60	NTSEL 0	—	
61	NTSEL 1	—	
62	NTSEL 2	—	
63	X2	O	Outputs the capstan motor control signal.
64	VDD	I	To be connected to +5V.

• IC802 (AN8320) : SUB-SERVO & ATF

Pin No.	Mark	I/O	Function
1	CAPFC	O	Outputs the capstan FG signal.
2	CAPFG 1	I	Inputs the capstan FG signal (230 pulses/rev).
3	NFC	I	This is the input terminal to connect with the capacitor of the NF.
4	CYLDPG	O	Outputs the cylinder PG signal (1 pulse/rev).
5	PGWA	I	This is the input terminal to connect with the VT for adjustment of the pulse width of the PD signal.
6	CYLPG	I	Inputs the cylinder PG signal (1 pulse/rev).
7	GND	I	For ground connection.
8	SVRF	I	Inputs the envelope detection signal.
9	CDD	I	This is the input terminal for connection with the detection circuit for the pilot signal's peak.
10	PD0	O	Outputs the detection signal for the pilot signal's peak.
11	PD1	I	Inputs the detection signal for the pilot signal's peak.
12	SP1	I	Inputs the sample hold control signal.
13	SP2		
14	Vspe	I	Inputs the standard voltage for the detection circuit of the difference of the pilot voltages.
15	SPE	I	Inputs the sample hold control signal.

Pin No.	Mark	I/O	Function
16	CSH	I	Input terminal for connection with the capacitor in the detection circuit for the peak voltage of the pilot signal.
17	ATFTER	O	Outputs the ATF control signal.
18	NFC	I	This is the input terminal to connect with the capacitor of the NF.
19	Vccl	I	To be connected to +5V.
20	SRVDL	I	This is the input terminal to connect with the ATF circuit.
21	Ph Tr Bias	O	Outputs the Ph Tr Bias signal.
22	Vref.	I	This is the input terminal to set the standard voltage.
23	LED1 IN	I	Inputs the capstan motor circuit signal.
24	LED1 OUT	O	Outputs the cylinder motor circuit signal.
25	LED2 IN	I	Inputs the mechanism circuit signal.
26	LED2 OUT	O	Outputs the mechanism circuit signal.
27	CYLDFG	O	Outputs the cylinder FG signal (40 pulses/rev).
28	CYLDFG	I	Inputs the cylinder FG signal (40 pulses/rev).
29	CYLDFG	O	Outputs the cylinder FG signal (40 pulses/rev).
30	CYLFG	I	Inputs the cylinder FG signal (40 pulses/rev).
31	STNDBY	I	To be connected to +5V.
32	RLFGT	I	Inputs the take-up reel FG signal (40 pulses/rev).
33	RLFGT	O	Outputs the take-up reel FG signal (40 pulses/rev).
34	RLFGT	I	Inputs the take-up reel FG signal (40 pulses/rev).
35	RLDFGT	O	Outputs the take-up reel FG signal (40 pulses/rev).
36	RLDFGS	O	Outputs the supply reel FG signal (40 pulses/rev).
37	RLDFGS	I	Inputs the supply reel FG signal (40 pulses/rev).
38	RLFGS	O	Outputs the supply reel FG signal (40 pulses/rev).
39	RLFGS	I	Inputs the supply reel FG signal (40 pulses/rev).
40	Vcc2	I	To be connected to +5V.
41	CAPFG2	O	Outputs the capstan FG signal (250 pulses/rev) (not used).
42	CAPFG2	I	Inputs the capstan FG signal (250 pulses/rev).
43	CAPFG2	O	Outputs the capstan FG signal (250 pulses/rev).
44	CAPFG2	I	Inputs the capstan FG signal (250 pulses/rev) (not used).
45	CAPDFG2	O	Outputs the capstan FG signal (250 pulses/rev) (not used).
46	CAPFIL	I	Inputs the control signal for the capstan motor driving.
47	CAPDFG1	O	Outputs the capstan FG signal (250 pulses/rev).
48	CAPDFG1	I	Inputs the capstan FG signal (250 pulses/rev).

■ BLOCK DIAGRAM



Note: ➡ Playback signal
⇨ Recording signal

■SCHEMATIC DIAGRAM

(This schematic diagram is subject to change without notice.)

Notes:

The voltage values and waveforms in these diagrams are measured by DC voltmeter and oscilloscope referenced to chassis ground. There may be some error depending on impedances and characteristics of the test equipment used.

- Voltages in parentheses are measured during play mode. Other values are measured in stop mode.
  (⟿ ⟿ ⟿) indicates the flow of the record signal.
  (⟿⟿⟿) indicates the flow of the play signal.

- **Important safety notice:**
  Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.

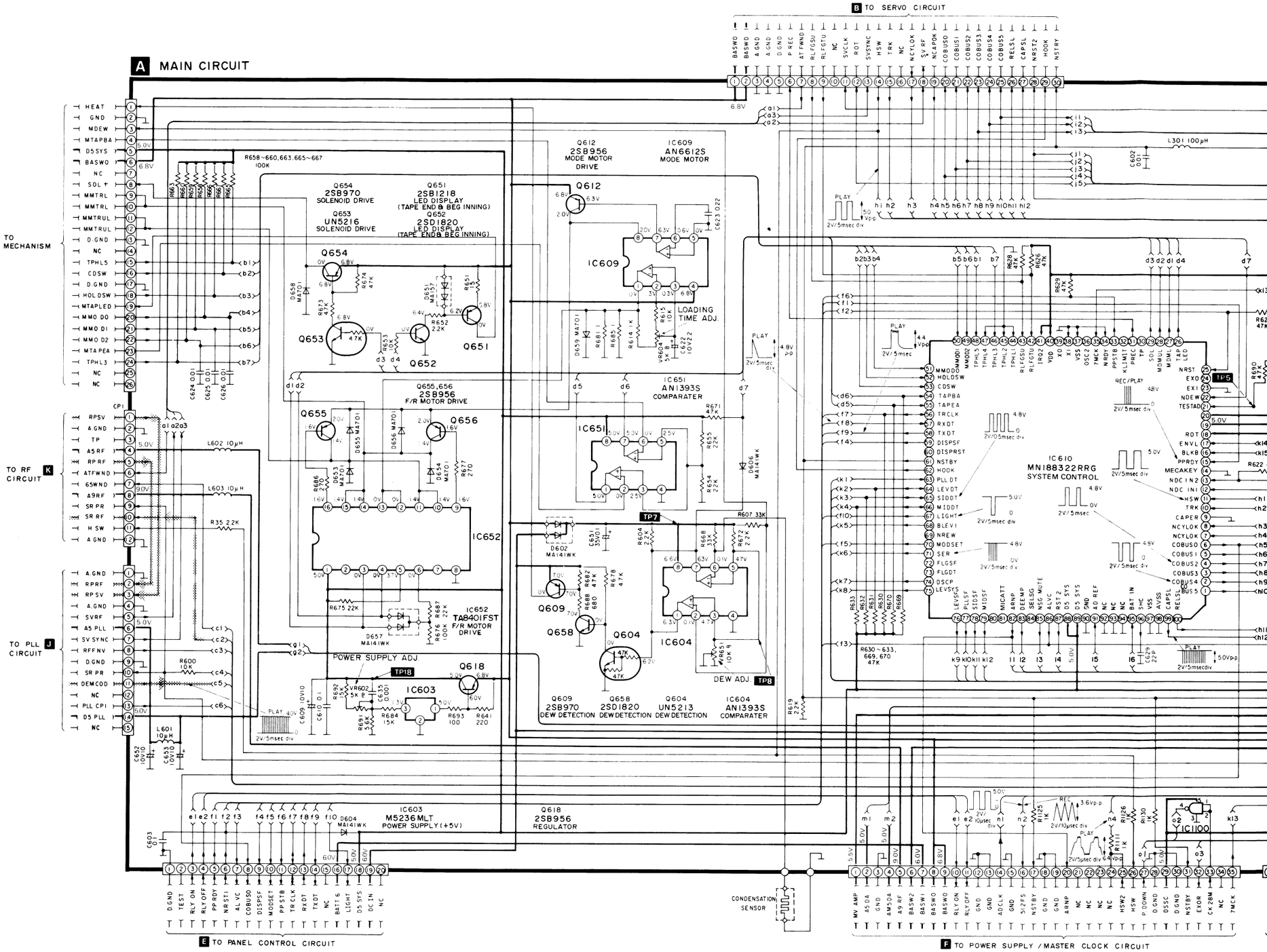
< >..... Voltage values at record mode.
( ).....Voltage values at play mode.
Other values are measured in stop mode.

Caution!

IC and LSI are sensitive to static electricity.
Secondary trouble can be prevented by taking care during repair.

- Cover parts boxes made of plastic with aluminum foil.
- Ground the soldering iron.
- Put a conductive mat on the work table.
- Do not touch the pins of IC or LSI with fingers directly.

A MAIN CIRCUIT



9 10 11 12 13 14 15 16 17 18 19

C TO ANALOGUE CIRCUIT

M INPUT CIRCUIT
LINE OUT

D TO H.P AMP CIRCUIT

IC610
MN188322RRG
SYSTEM CONTROL

IC601
IC602
IC606
IC607
TK1068IMT
POWER SUPPLY
(+5V)

IC601,602
TK1068IMT
POWER SUPPLY
(+5V)

IC606,607
TK1068IMT
POWER SUPPLY
(+5V)

IC605
M5236MLT
POWER SUPPLY
(+5V)

IC608
TK1068IMT
POWER SUPPLY(+5V)

IC1100
TC7S00FTX

IC551
NJM4560MT
OP AMP

Q606
2SD1820
REGULATOR

Q611
2SB956
REGULATOR

Q603
UN5213
DC IN POWER SUPPLY
DETECTION

Q601
2SD1820
DC IN POWER SUPPLY
DETECTION

Q608,613
UN5213
RESET SIGNAL
CONTROL

Q605
UN5213
POWER SUPPLY
CONTROL

Q619
UN5213
POWER SUPPLY
CONTROL

Q615
UN5219
POWER SUPPLY
CONTROL

Q614
UN5213
POWER SUPPLY
CONTROL

Q382
Q383
Q384
Q381
Q381,382
UN5113
MUTING
Q383,384
2SD1819
MUTING

Q314
Q465
Q466
UN5213TW
MUTING CONTROL
2SD1820
MUTING CONTROL
UN5213TW
MUTING CONTROL

BATTERY CHECK
VOLTAGE ADJ.

POWER SUPPLY ADJ.

OFFSET VOLTAGE
ADJ.

REC/PLAY

HEADPHONES

J3
(DC INPUT
CONNECTOR)

DC IN
(6V)

BATTERY
6V

M TO INPUT CIRCUIT

G TO SIGNAL PROCESSING CIRCUIT

H TO DIGITAL OUT CIRCUIT

I TO A-D/A-D CIRCUIT

POWER SUPPLY / MASTER CLOCK CIRCUIT

B SERVO CIRCUIT / E PANEL CONTROL CIRCUIT

B SERVO CIRCUIT

IC801 MN52080SDE MAIN SERVO

IC805 TK10681MT POWER SUPPLY (+5V)

IC803 ICTAN8285S CYLINDER MOTOR DRIVE

IC804 ICTAN8285S CAPSTAN MOTOR DRIVE

IC806 IC MN4066BS GAIN SELECT SWITCH

IC802 AN8320F LINER SERVO

IC807 TC4S01FTW NOR GATE

Q818 UN5113 CAPSTAN ROTATION DETECTION

Q801,823 UN5213 CAPSTAN ROTATION DETECTION

Q819 2SD1819 CYLINDER FG

Q825 UN5213 REC ATF SERVO SIGNAL DETECTION (REC MODE)

Q824 UN5213

Q820 2SD1819 CAPSTAN FG

Q821,822 2SD1819 REEL FG

Q802,804 806,808 2SB956 CYLINDER MOTOR DRIVE

Q803,805 807,809 2SD813 CYLINDER MOTOR DRIVE

Q810,812 814,816 2SB956 CAPSTAN MOTOR DRIVE

Q811,813 815,817 2SD813 CAPSTAN MOTOR DRIVE

PG PHASE ADJ.

TO MAIN CIRCUIT

9 10 11 12 13 14 15 16 17 18 19

Q802,804 806,808 2SB956 CYLINDER MOTOR DRIVE

Q803,805 807,809 2SD813 CYLINDER MOTOR DRIVE

Q810,812 814,816 2SB956 CAPSTAN MOTOR DRIVE

Q811,813 815,817 2SD813 CAPSTAN MOTOR DRIVE

Q820 2SD1819 CAPSTAN FG

Q821,822 2SD1819 REEL FG

CYLINDER MOTOR CIRCUIT

CAPSTAN MOTOR CIRCUIT

MECHANISM CIRCUIT

E PANEL CONTROL CIRCUIT

IC701 MN15845RRF MICRO COMPUTER (PANEL CONTROL)

IC702 SCI7700YTA RESET

IC703, 705 SCI7700YTA RESET

IC705 SCI7710YBA POWER SUPPLY(+5V)

Q701 2SD1819 DC IN POWER SUPPLY DETECT

Q702 UN5213 POWER SUPPLY OFF DETECT

Q703 UN5213 RESET(SYSTEM CONTROL)

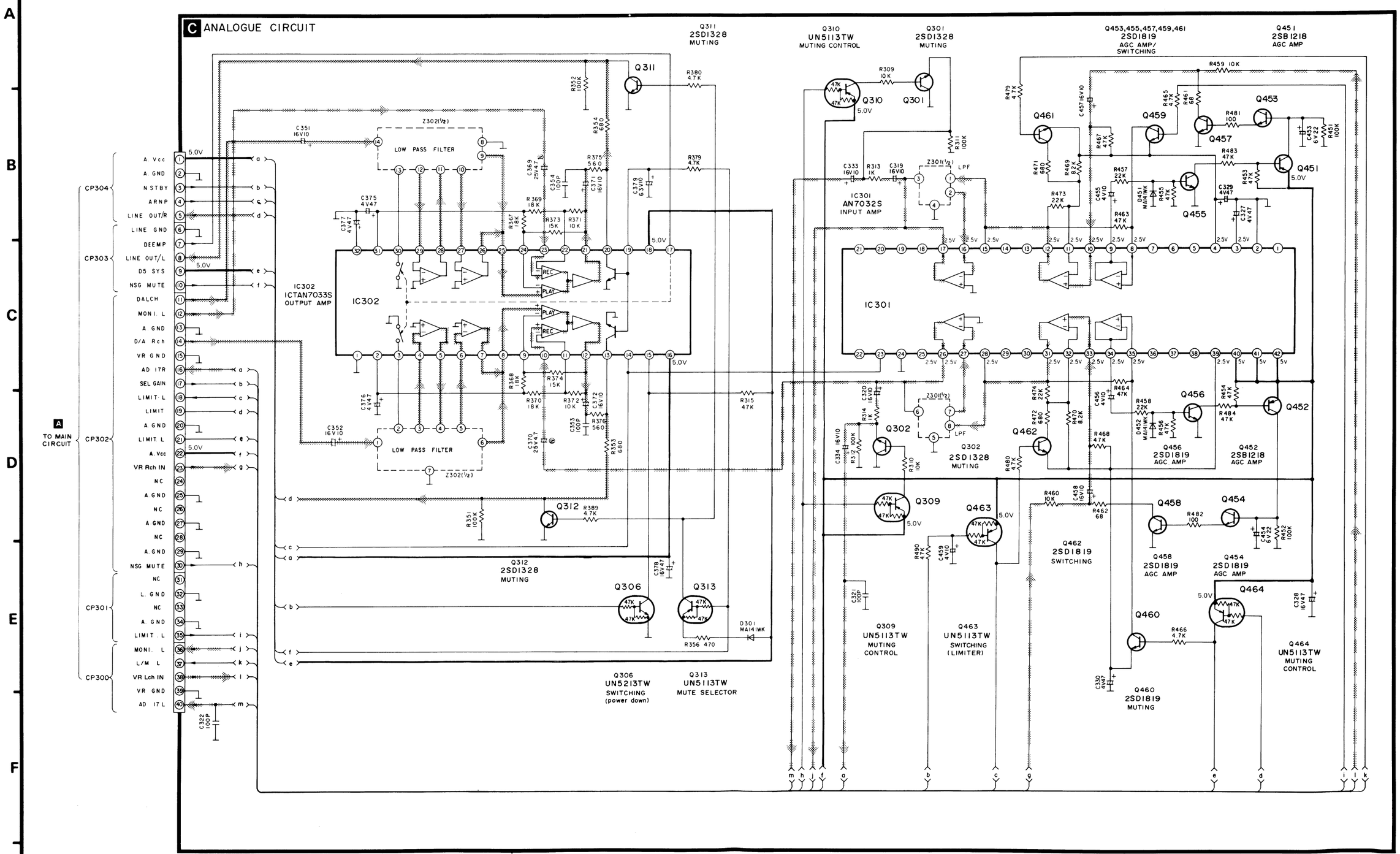
Q704 2SD1820 LED DISPLAY

LED

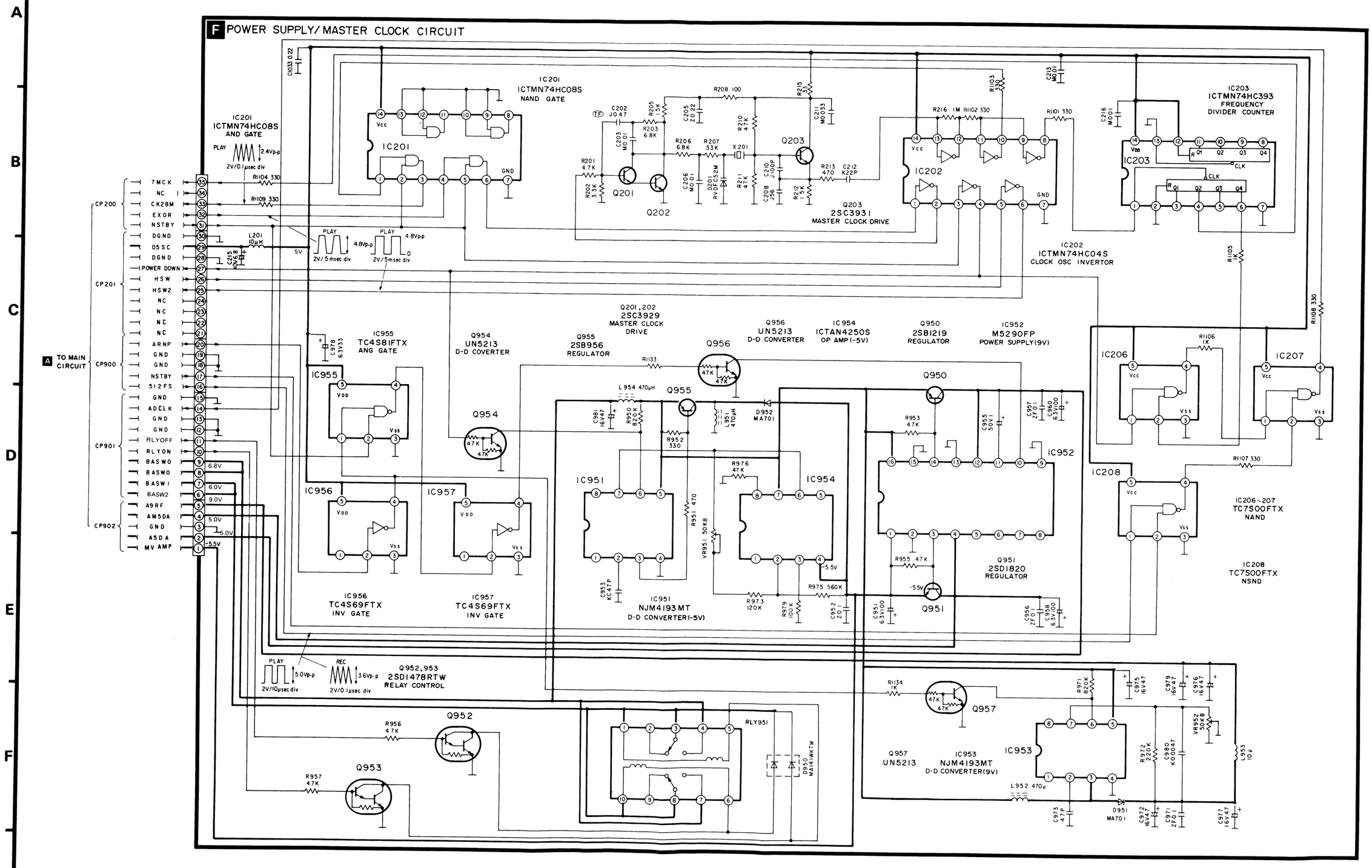
L TO OPERATION KEY CIRCUIT

A TO MAIN CIRCUIT

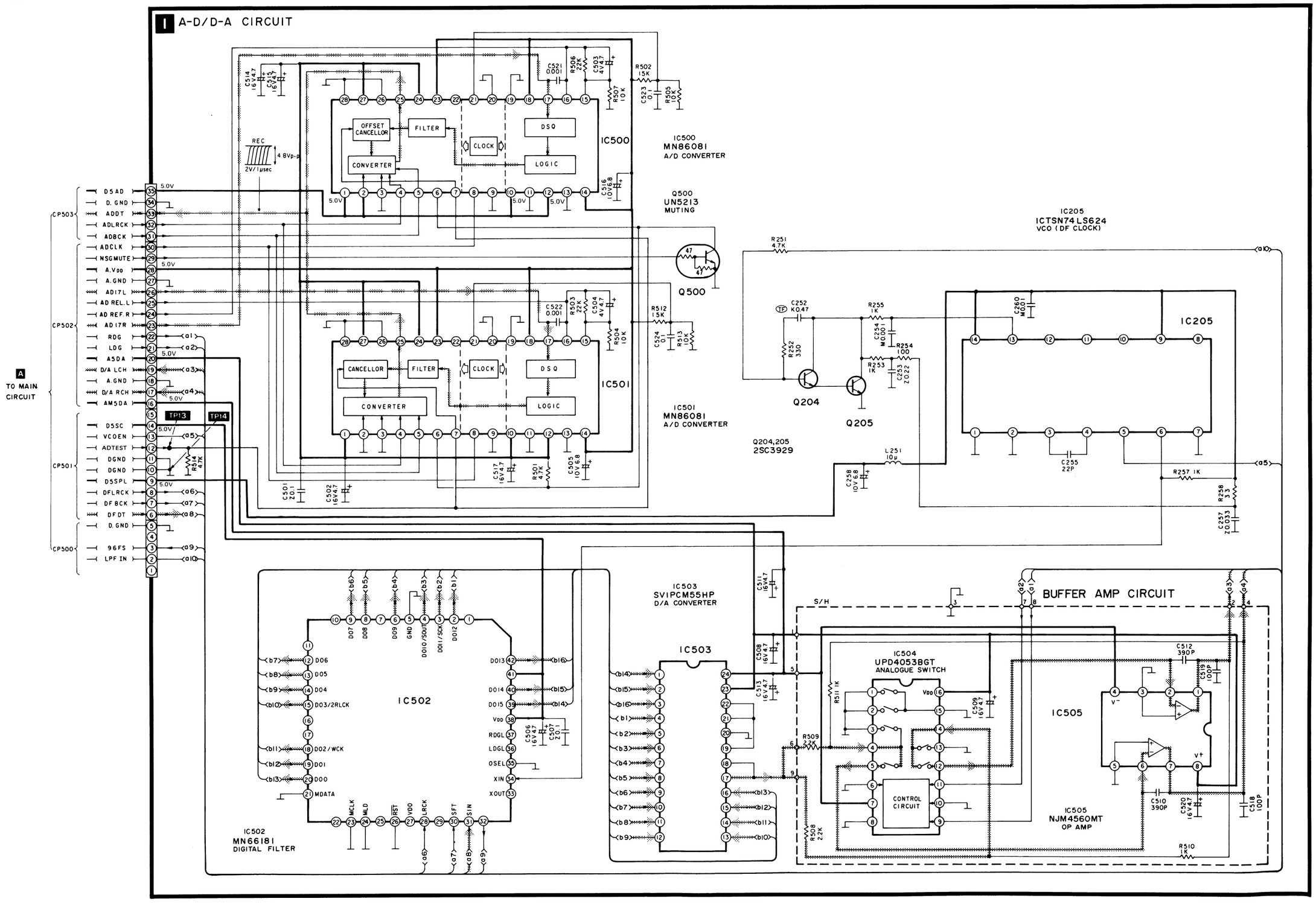
C ANALOGUE CIRCUIT



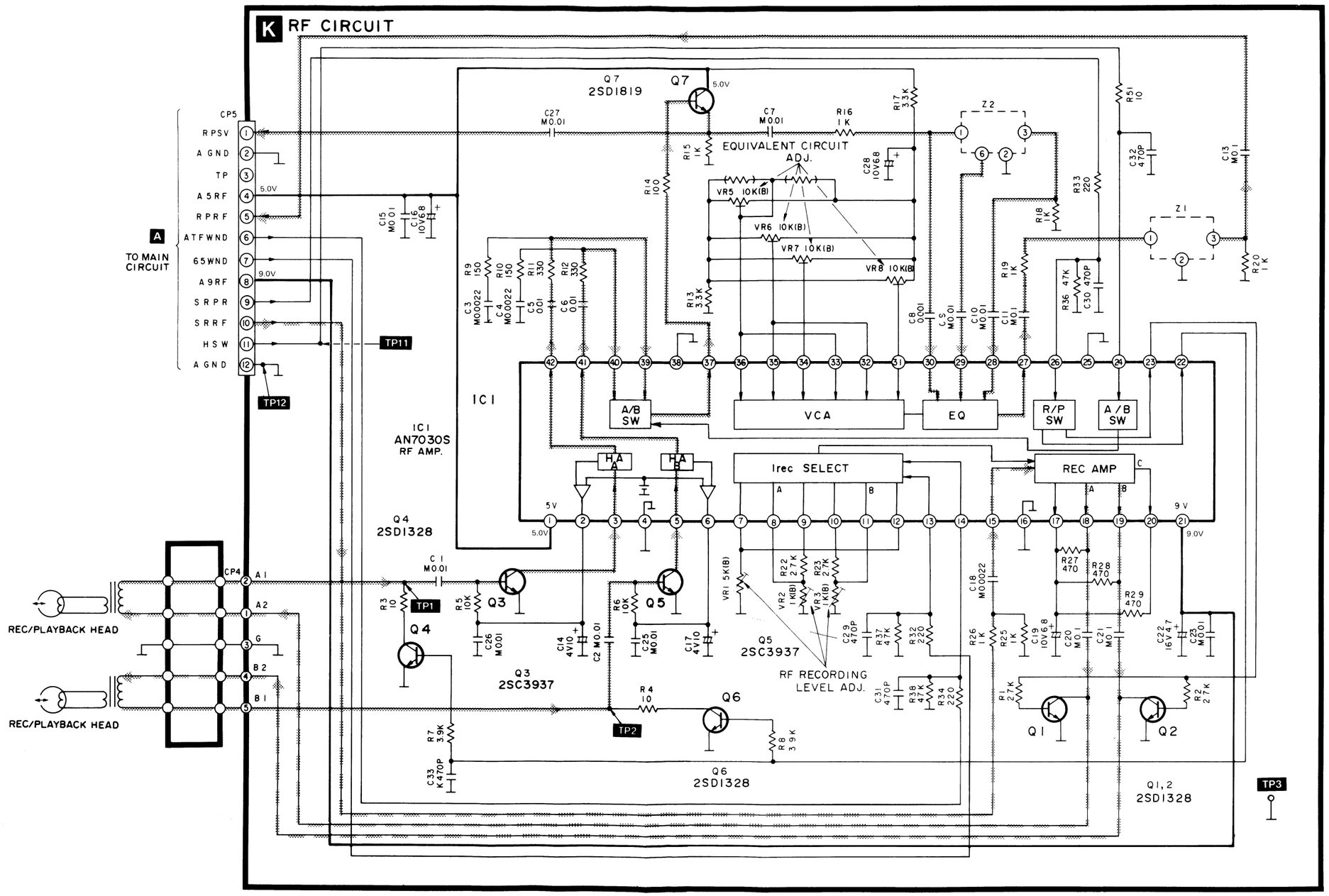
F POWER SUPPLY/MASTER CLOCK CIRCUIT



I A-D/D-A CIRCUIT

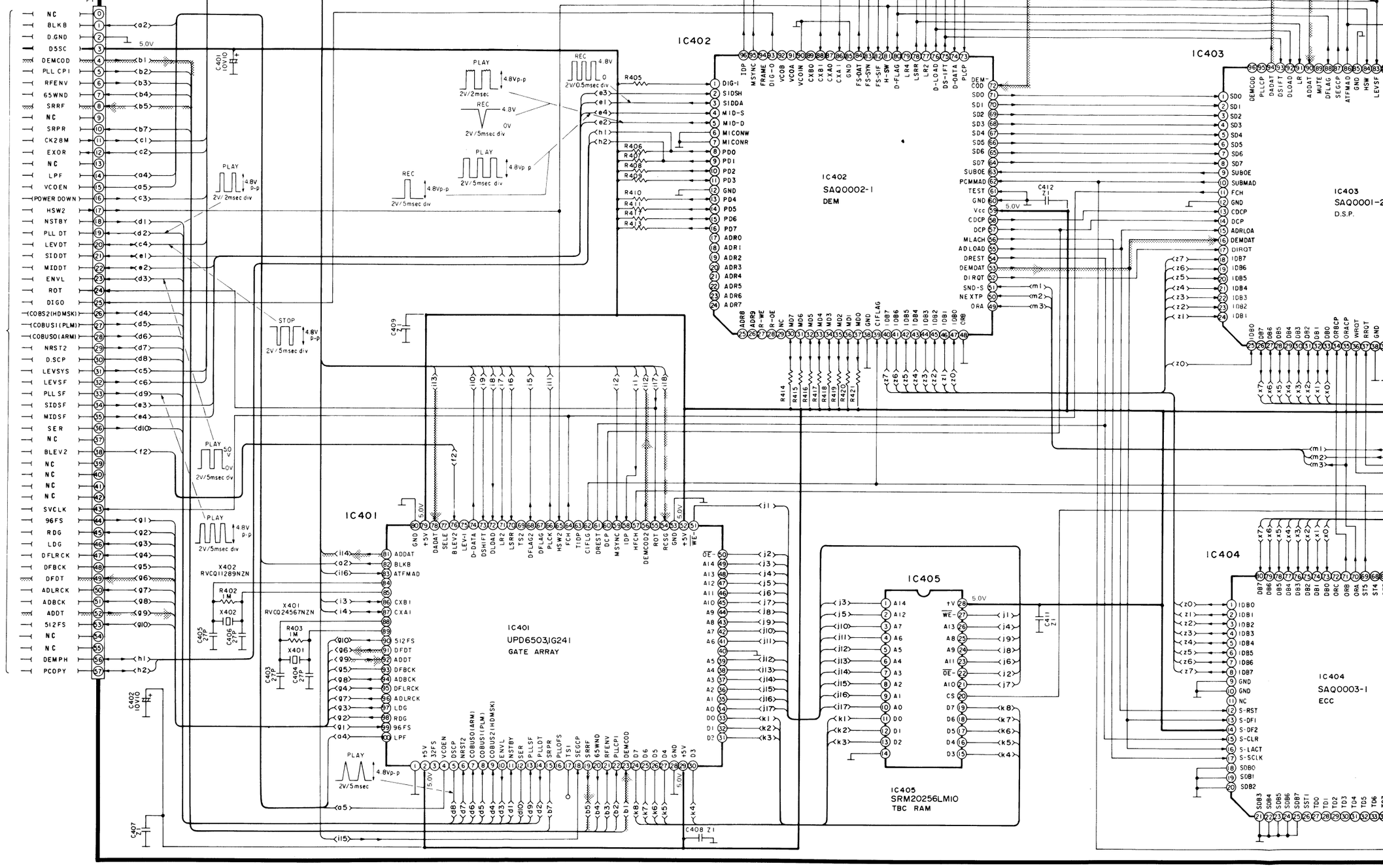


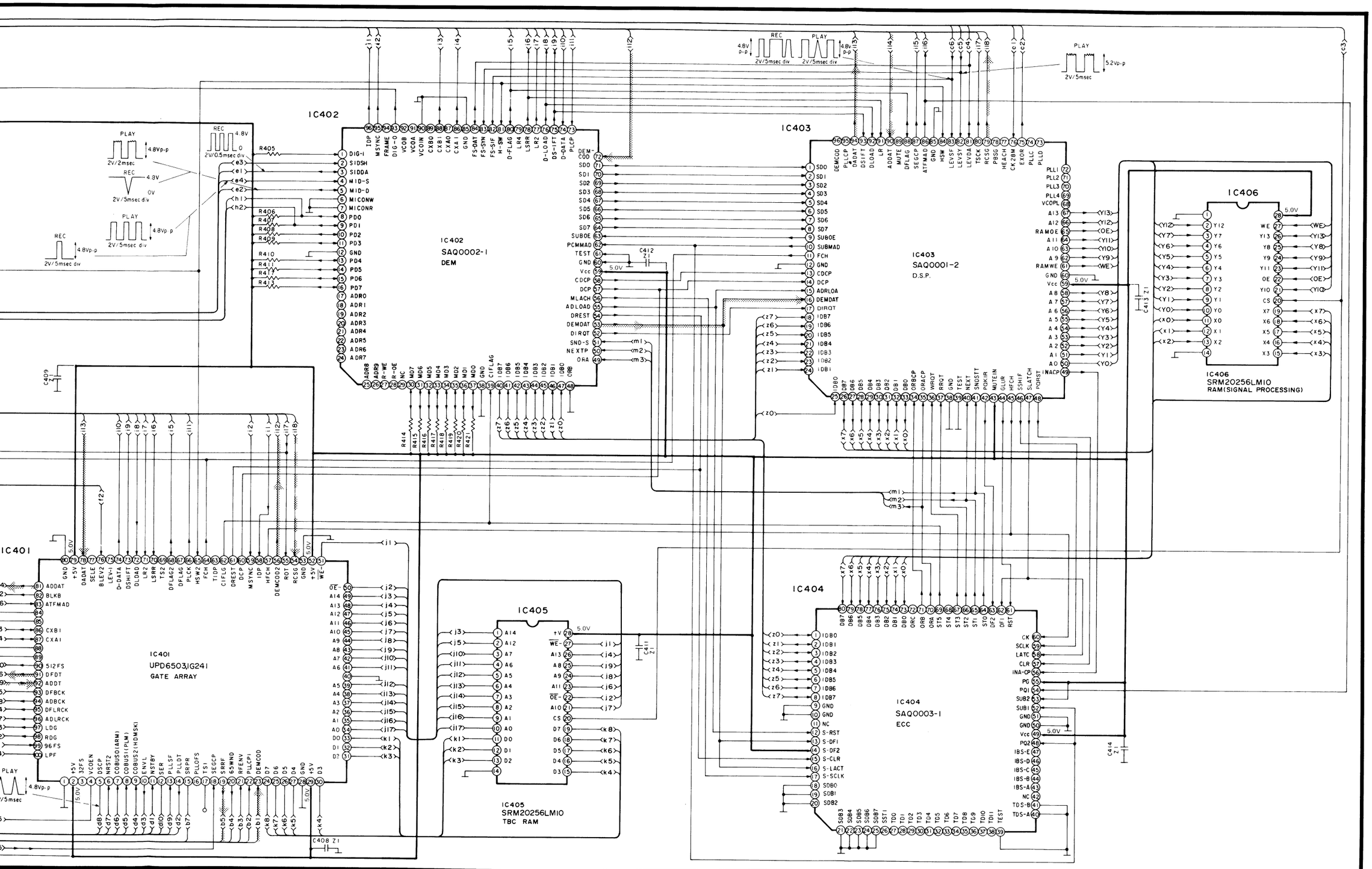
K RF CIRCUIT


K RF CIRCUIT
CP5
RPSV
AGND
TP
A5RF
RPRF
ATFWND
65WND
A9RF
SRPR
SRRF
HSW
AGND
5.0V
9.0V
A
TO MAIN CIRCUIT
TP11
TP12
IC1
AN7030S
RF AMP.
Q7
2SD1819
EQUIVALENT CIRCUIT ADJ.
VR5 10K(B)
VR6 10K(B)
VR7 10K(B)
VR8 10K(B)
A/B SW
VCA
EQ
R/P SW
A/B SW
HA
Irec SELECT
REC AMP
Q4
2SD1328
Q3
2SC3937
Q5
2SC3937
Q6
2SD1328
Q1
Q2
Q1,2
2SD1328
RF RECORDING LEVEL ADJ.
CP4
A1
A2
G
B2
B1
REC/PLAYBACK HEAD
REC/PLAYBACK HEAD
TP1
TP2
TP3

G SIGNAL PROCESSING CIRCUIT

G SIGNAL PROCESSING CIRCUIT

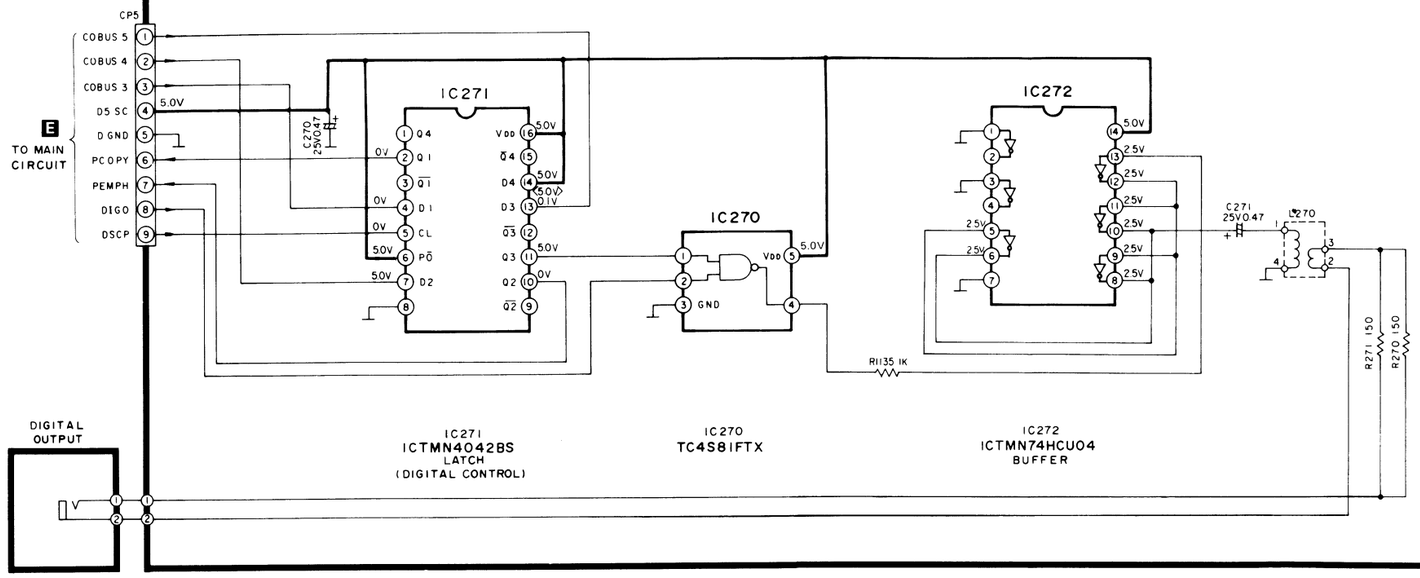



IC402
SAQ0002-1
DEM
IC403
SAQ0001-2
D.S.P.
IC406
SRM20256LM10
RAM(SIGNAL PROCESSING)
IC401
UPD6503IG241
GATE ARRAY
IC405
SRM20256LM10
TBC RAM
IC404
SAQ0003-1
ECC
PLAY
REC
4.8Vp-p
2V/2msec
2V/0.5msec div
2V/5msec div
5.2Vp-p
5.0V
0V

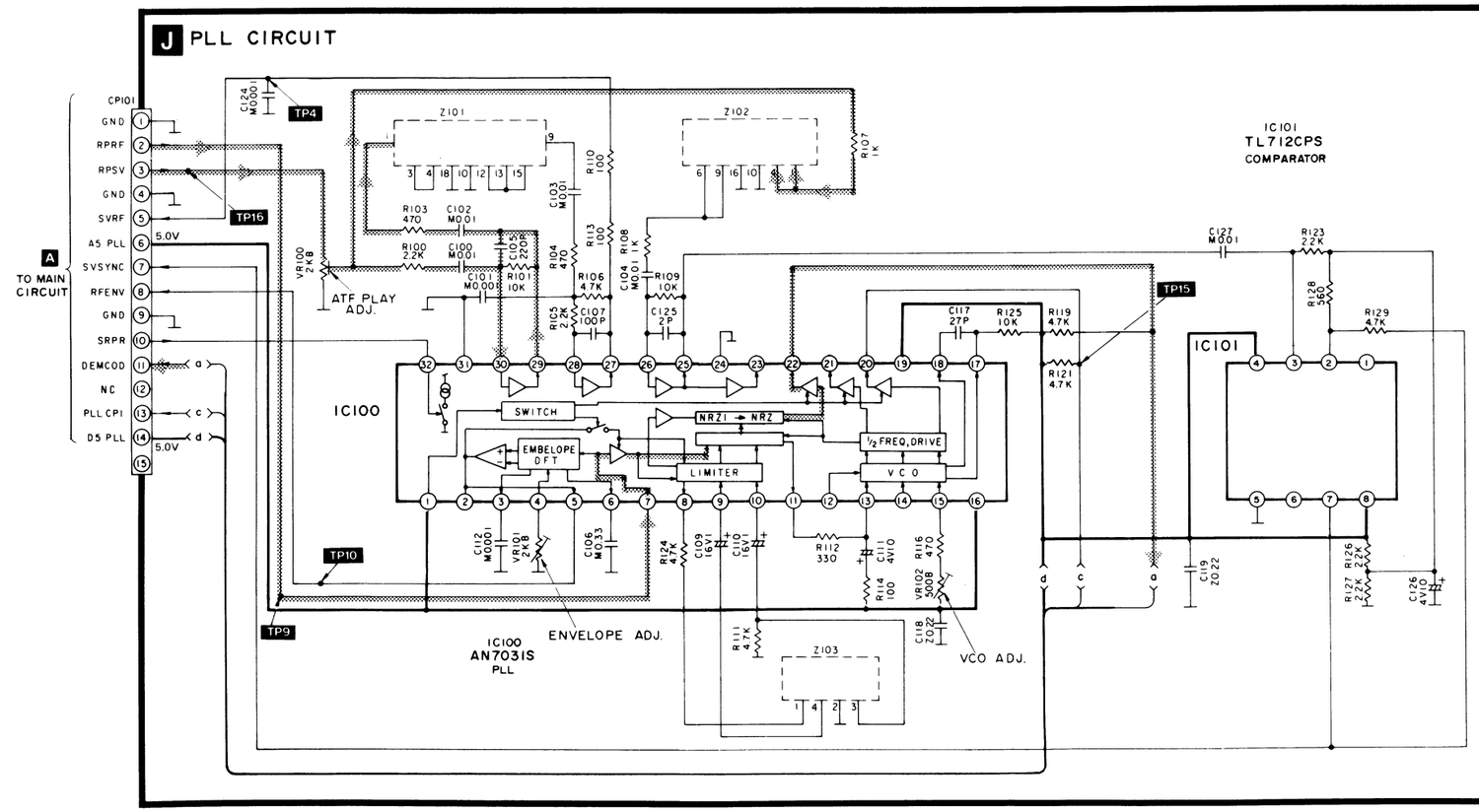
SV-260 SV-260

H DIGITAL OUT CIRCUIT / J PLL CIRCUIT / D HEADPHONES AMP CIRCUIT / L OPERATION KEY CIRCUIT

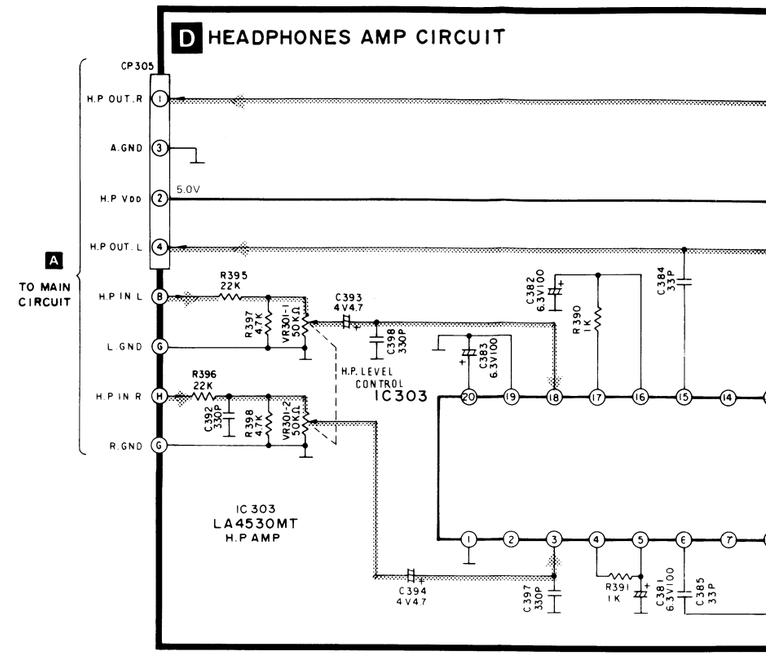
H DIGITAL OUTPUT CIRCUIT



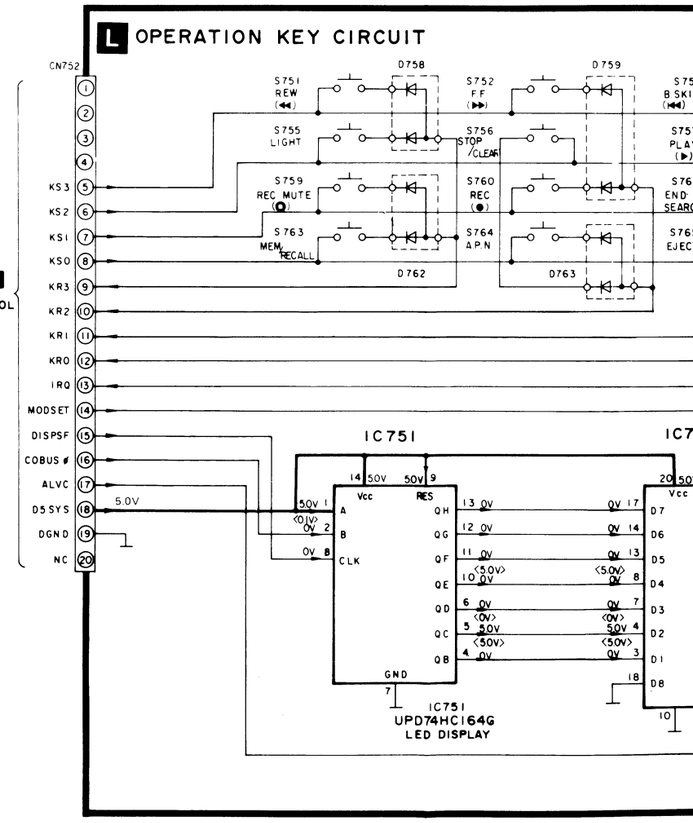
J PLL CIRCUIT



D HEADPHONES AMP CIRCUIT

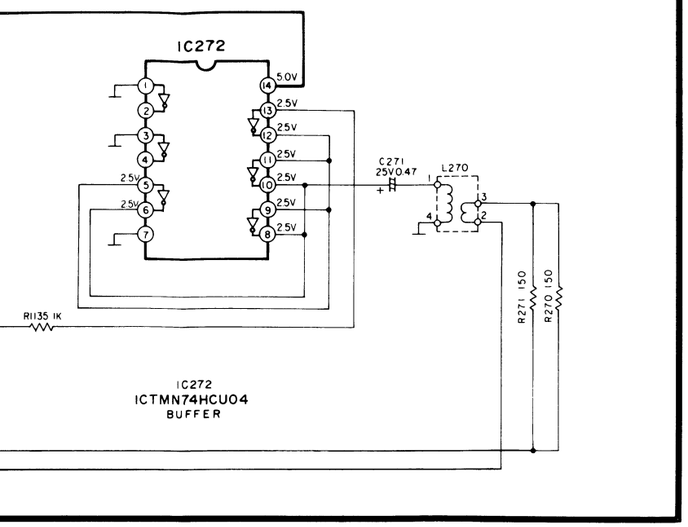


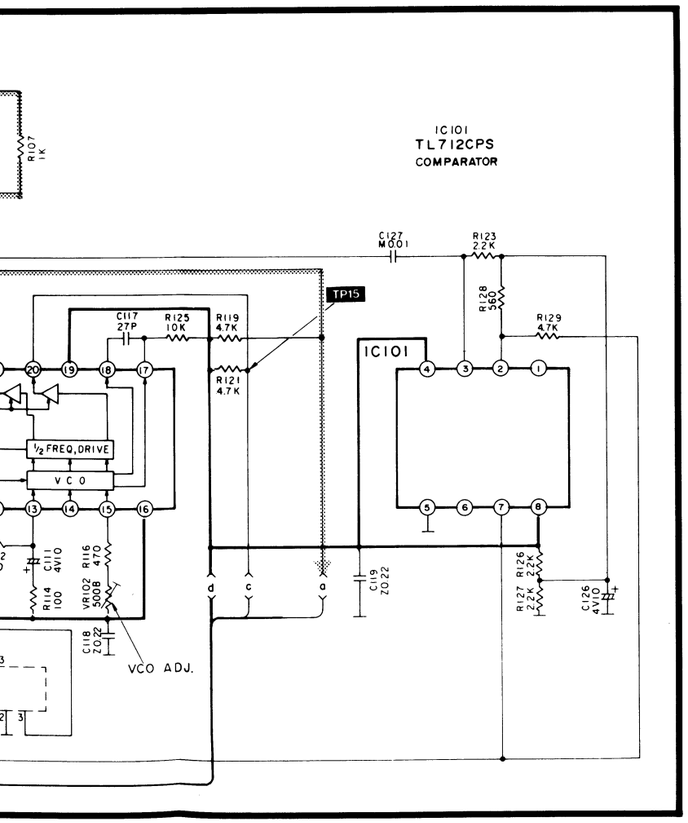
L OPERATION KEY CIRCUIT



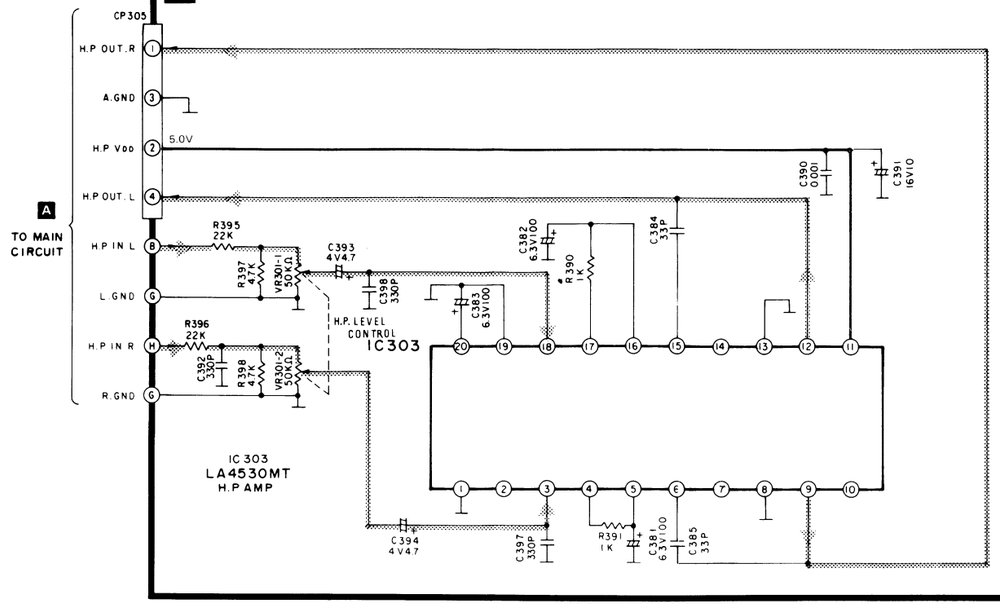
5 6 7 8 9 10 11 12 13 14

NES AMP CIRCUIT / L OPERATION KEY CIRCUIT





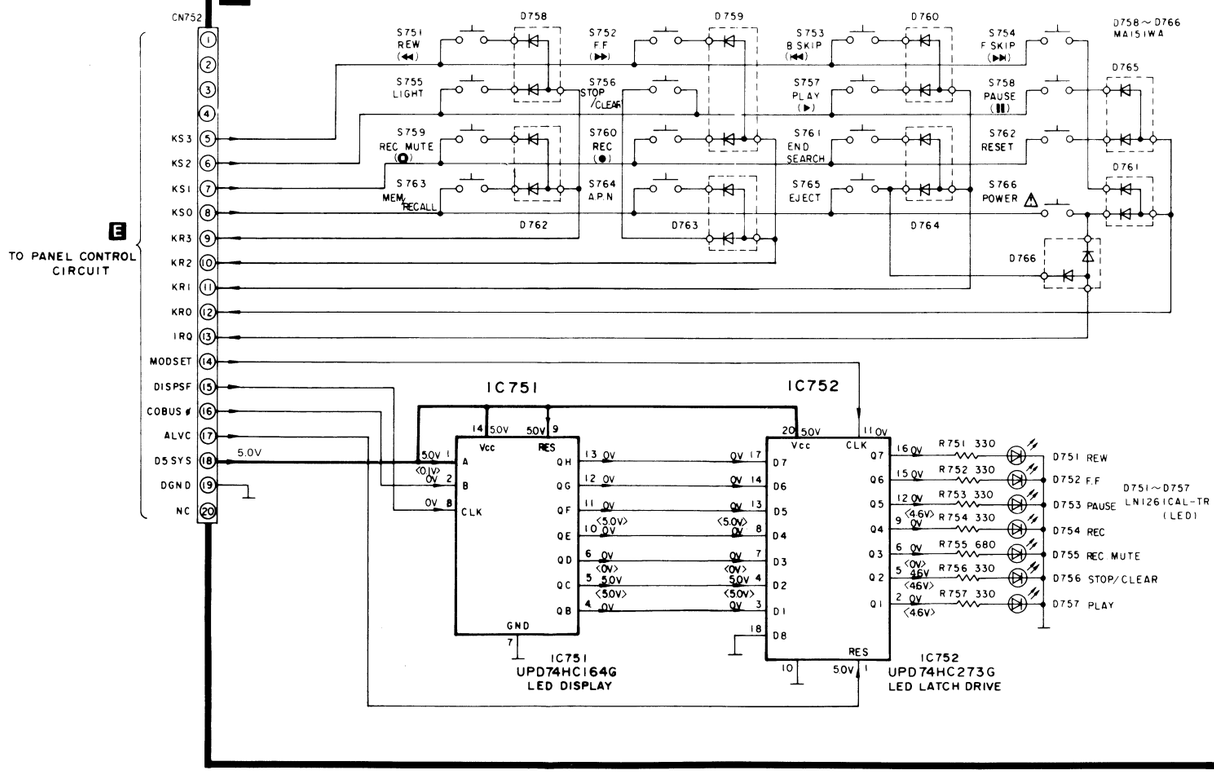
D HEADPHONES AMP CIRCUIT



Notes:

- **S751** : Rew. switch.
- **S752** : F.F. switch.
- **S753** : Backward skip switch.
- **S754** : Forward skip switch.
- **S755** : Light switch.
- **S756** : Stop/Clear switch.
- **S757** : Play switch.
- **S758** : Pause switch.
- **S759** : Rec mute switch.
- **S760** : Record switch.
- **S761** : End search switch.
- **S762** : Counter reset switch.
- **S763** : Memory/Recall switch.
- **S764** : Auto program numbering switch.
- **S765** : Eject switch.
- **S766** : Power switch.

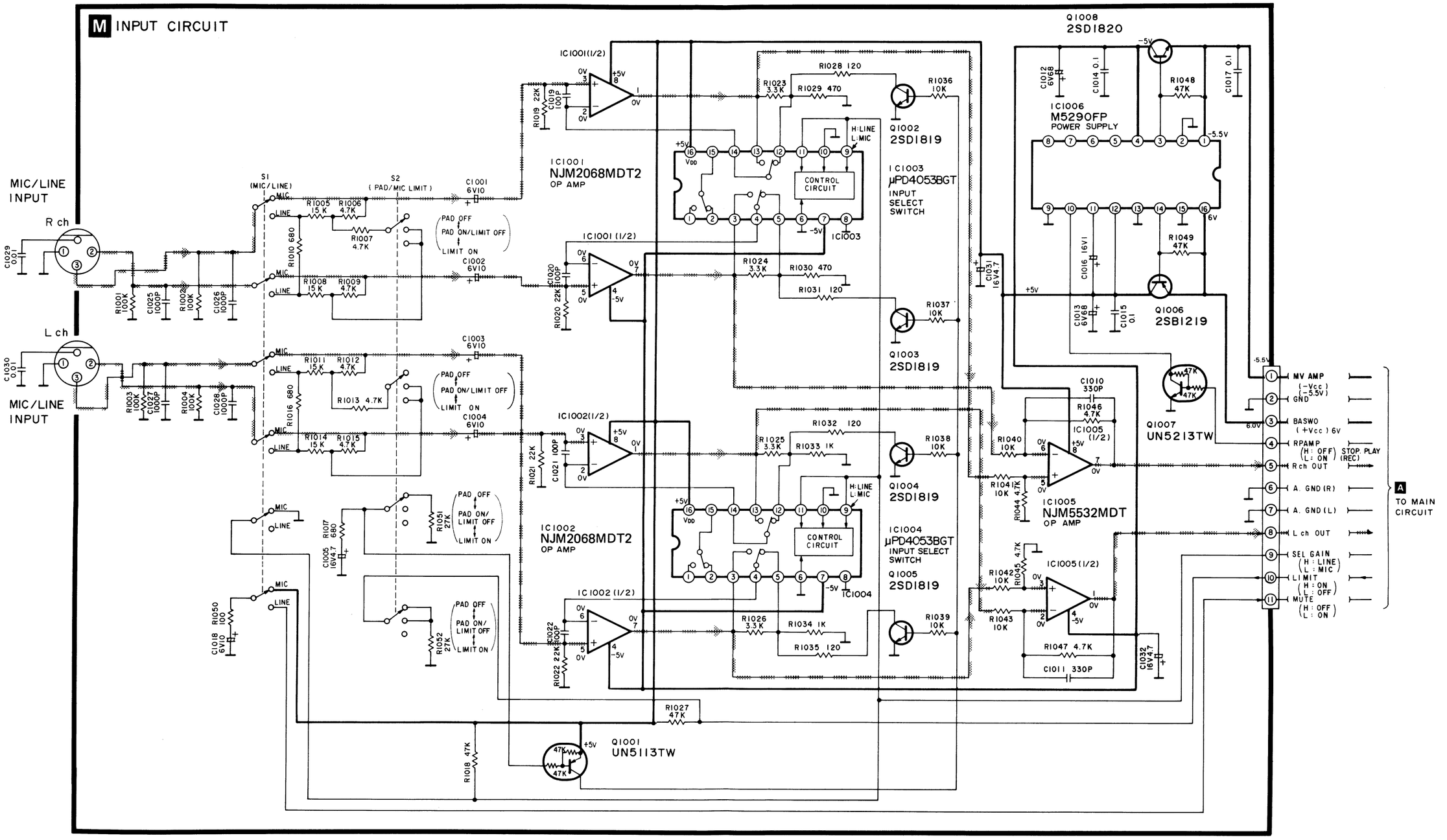
L OPERATION KEY CIRCUIT



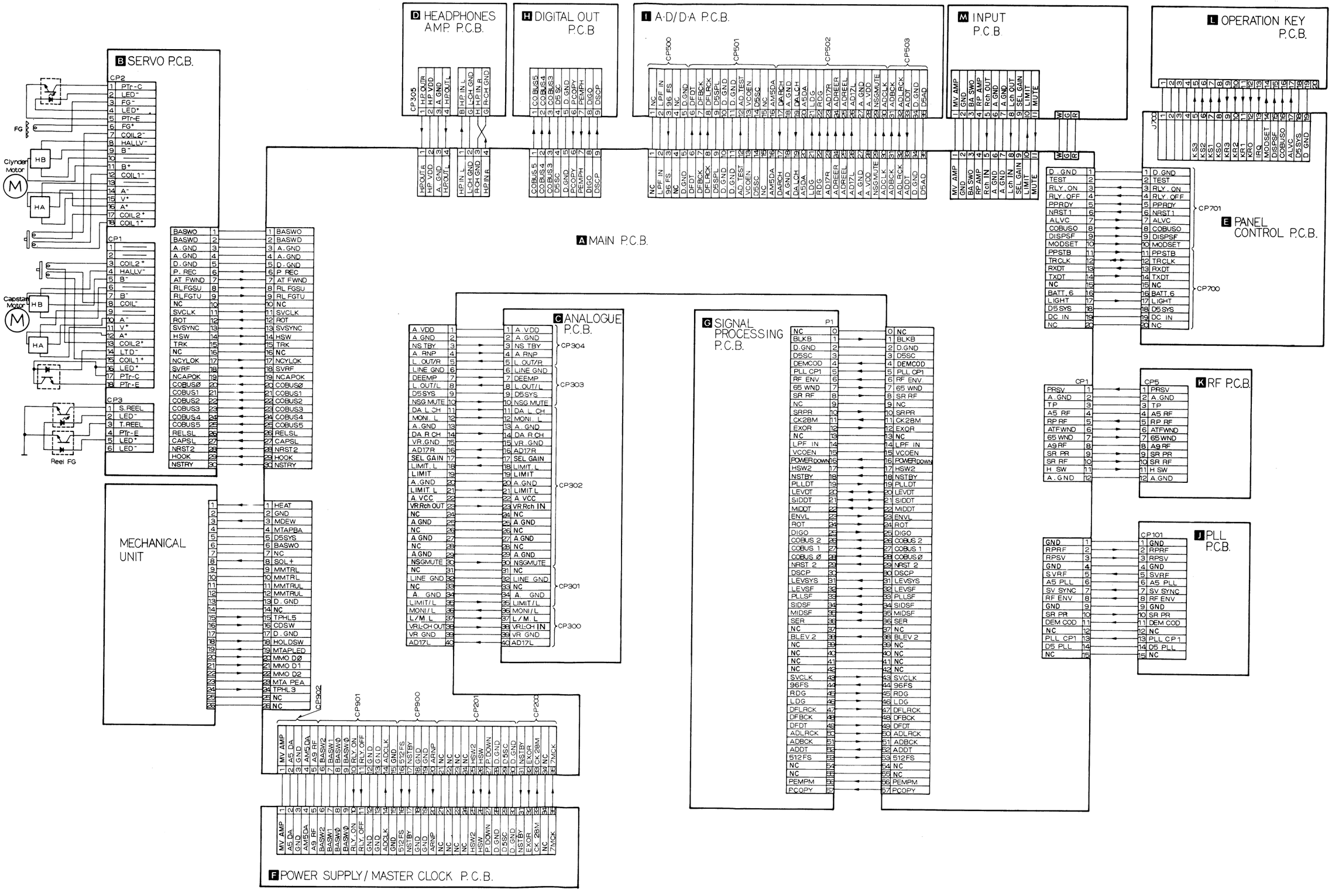
15 16 17 18 19 20 21 22 23

M INPUT CIRCUIT

Notes:
- **S1** : Input selector switch.
- **S2** : PAD/MIC LIM selector switch.

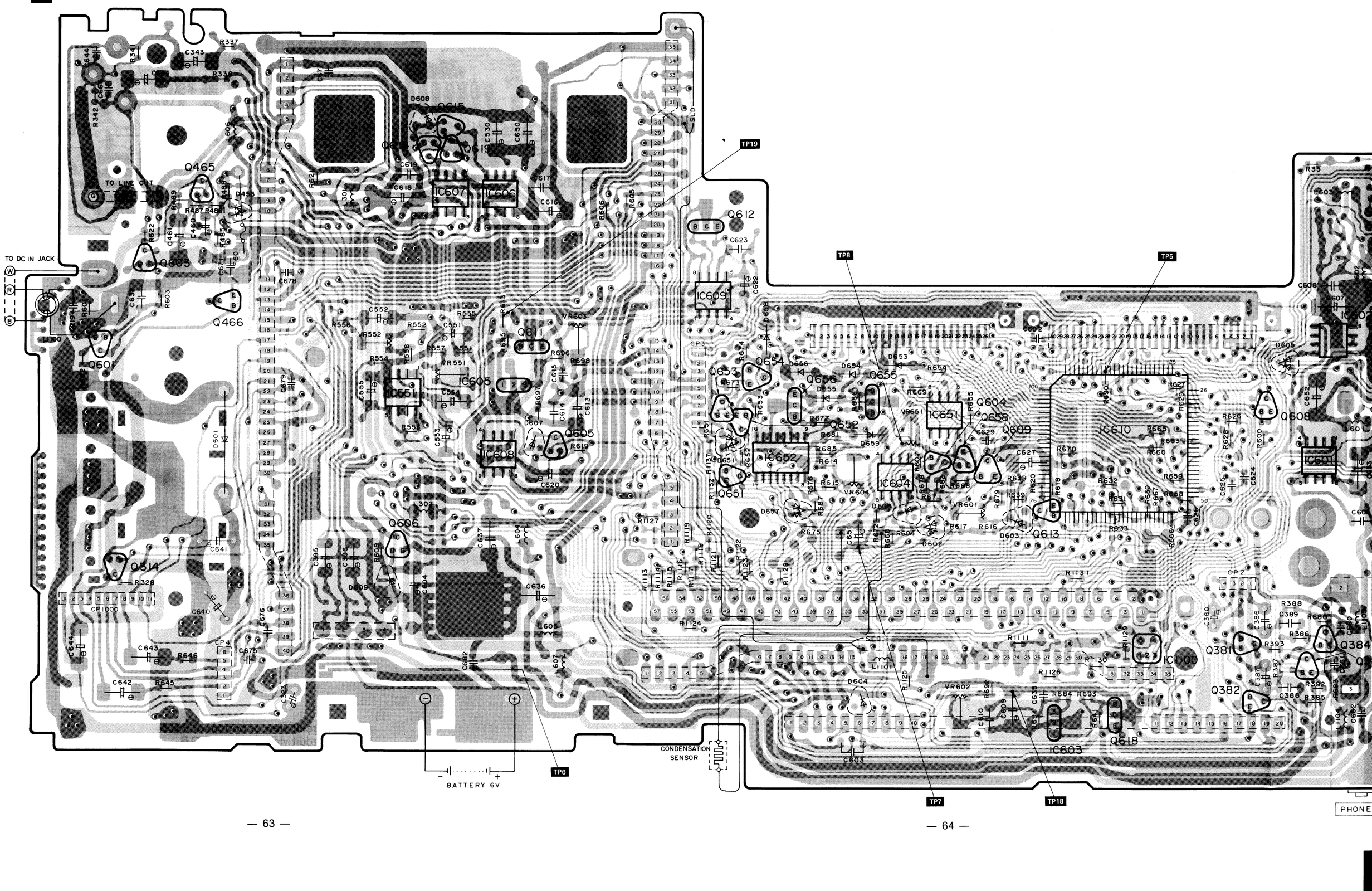


■ WIRING CONNECTION DIAGRAM

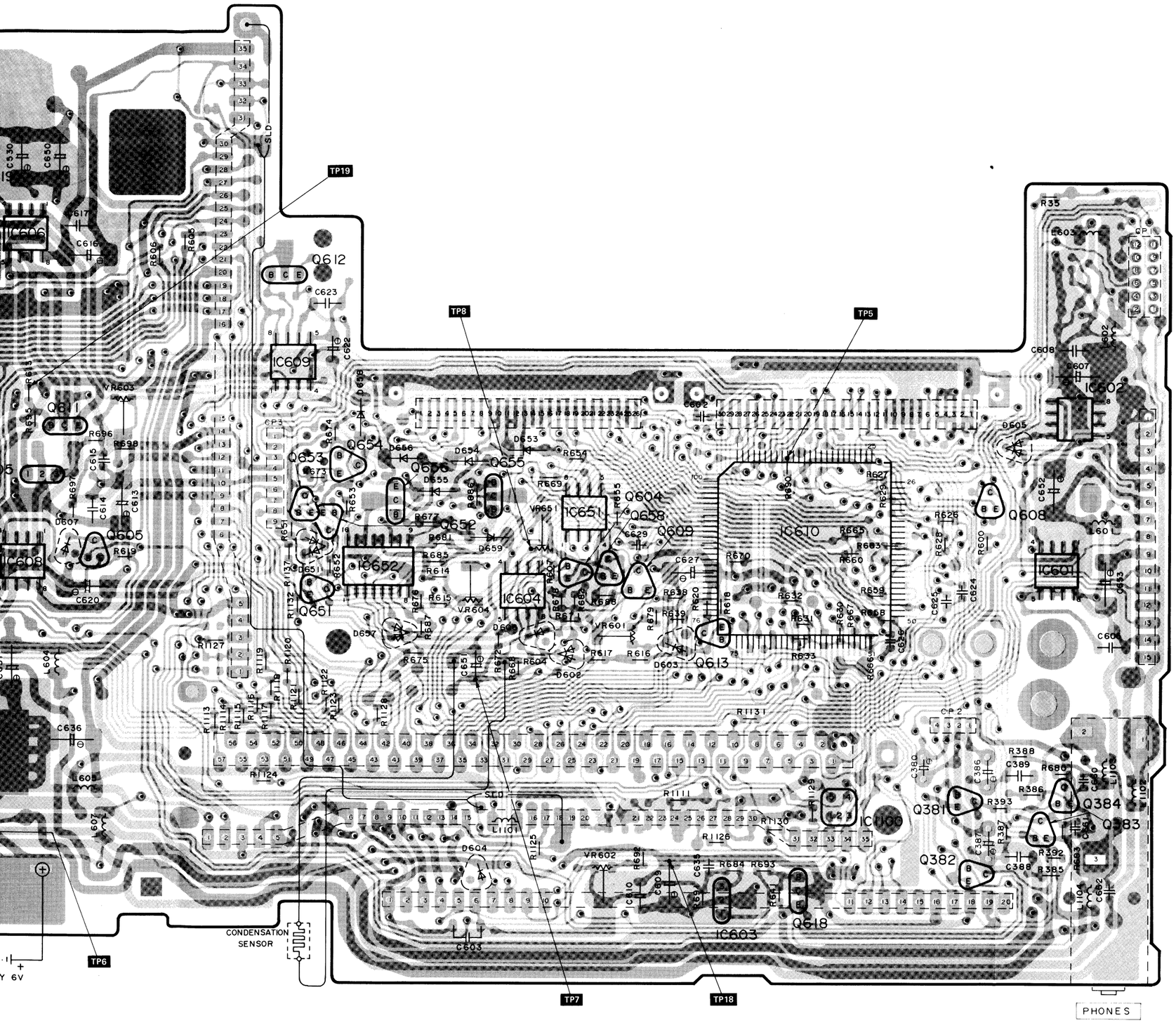


■ PRINTED CIRCUIT BOARDS

A MAIN P.C.B.

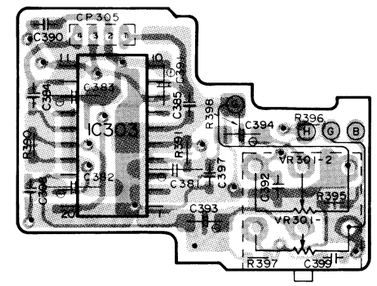


5 6 7 8 9 10 11 12 13 14

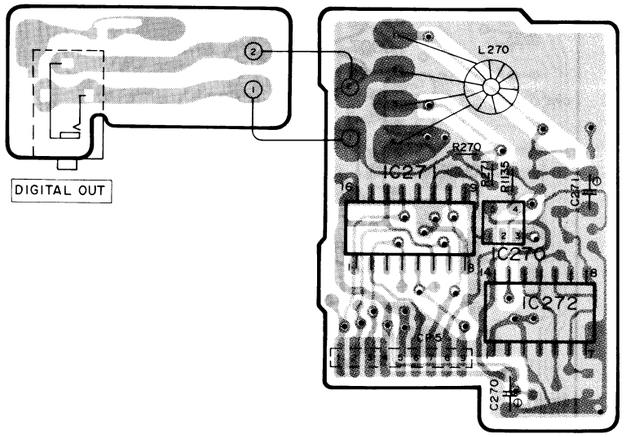


— 64 —

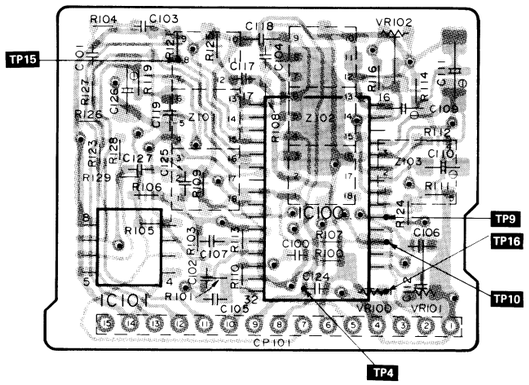
D HEADPHONES AMP P.C.B.



H DIGITAL OUT P.C.B.



J PLL P.C.B.



● ● Circuit view of bottom of P.C.B.
● ● Circuit view of top of P.C.B.

— 65 —

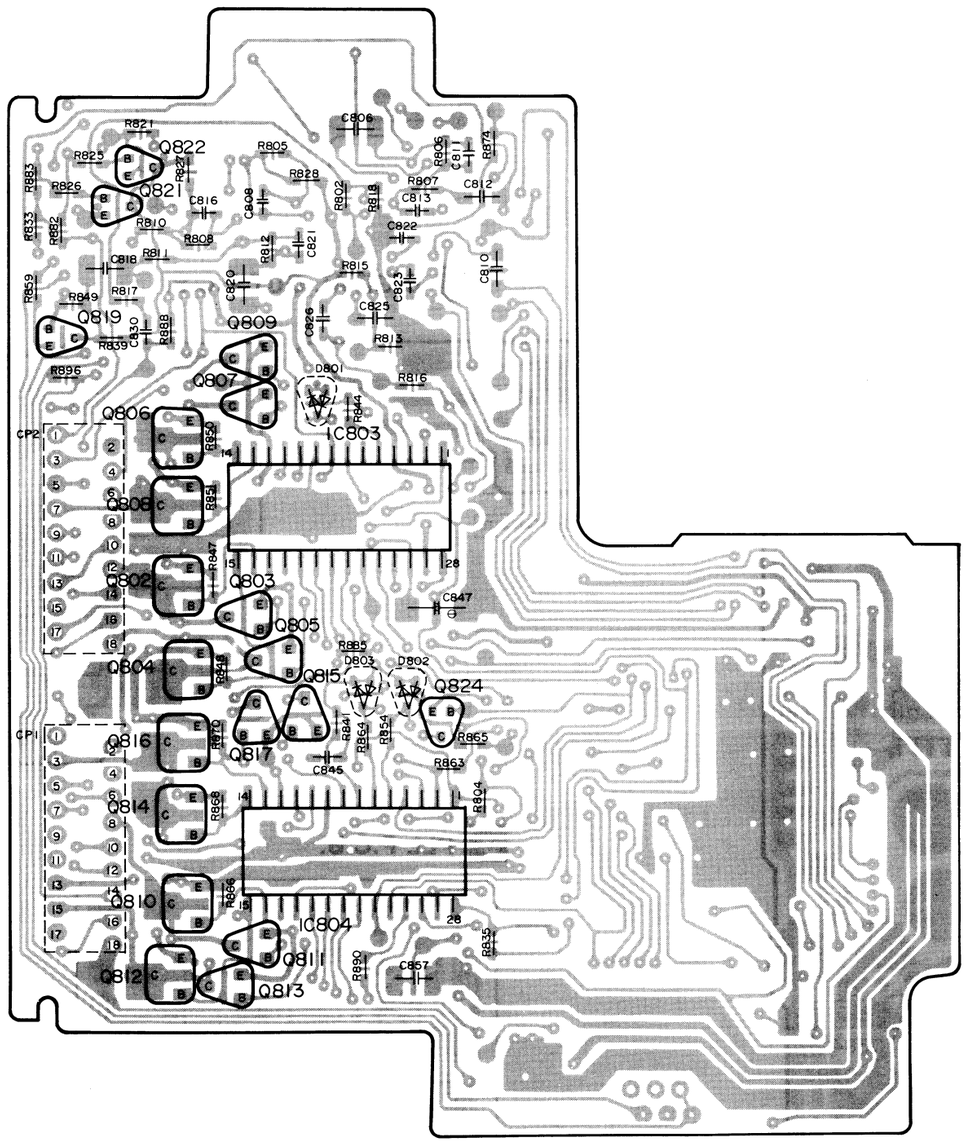
SV-260 SV-260

1 2 3 4 5 6 7 8 9 10

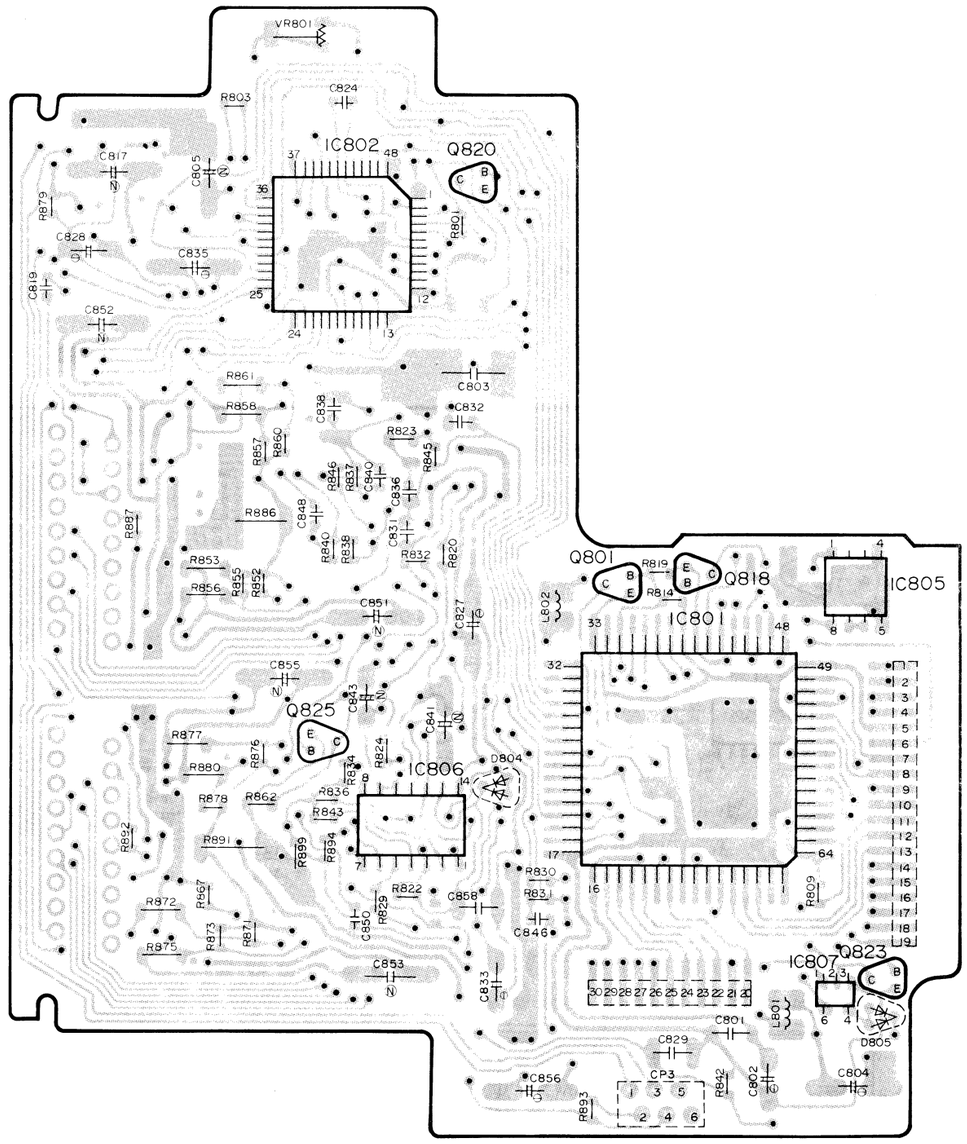
A B C D E F

B SERVO P.C.B.

• Parts side

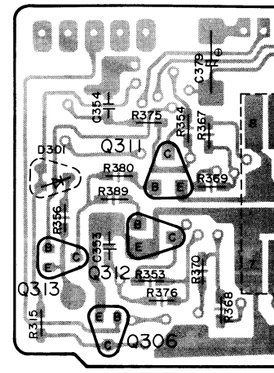


• Solder side

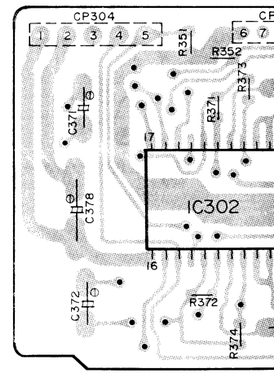


C ANALOGUE P

• Parts side



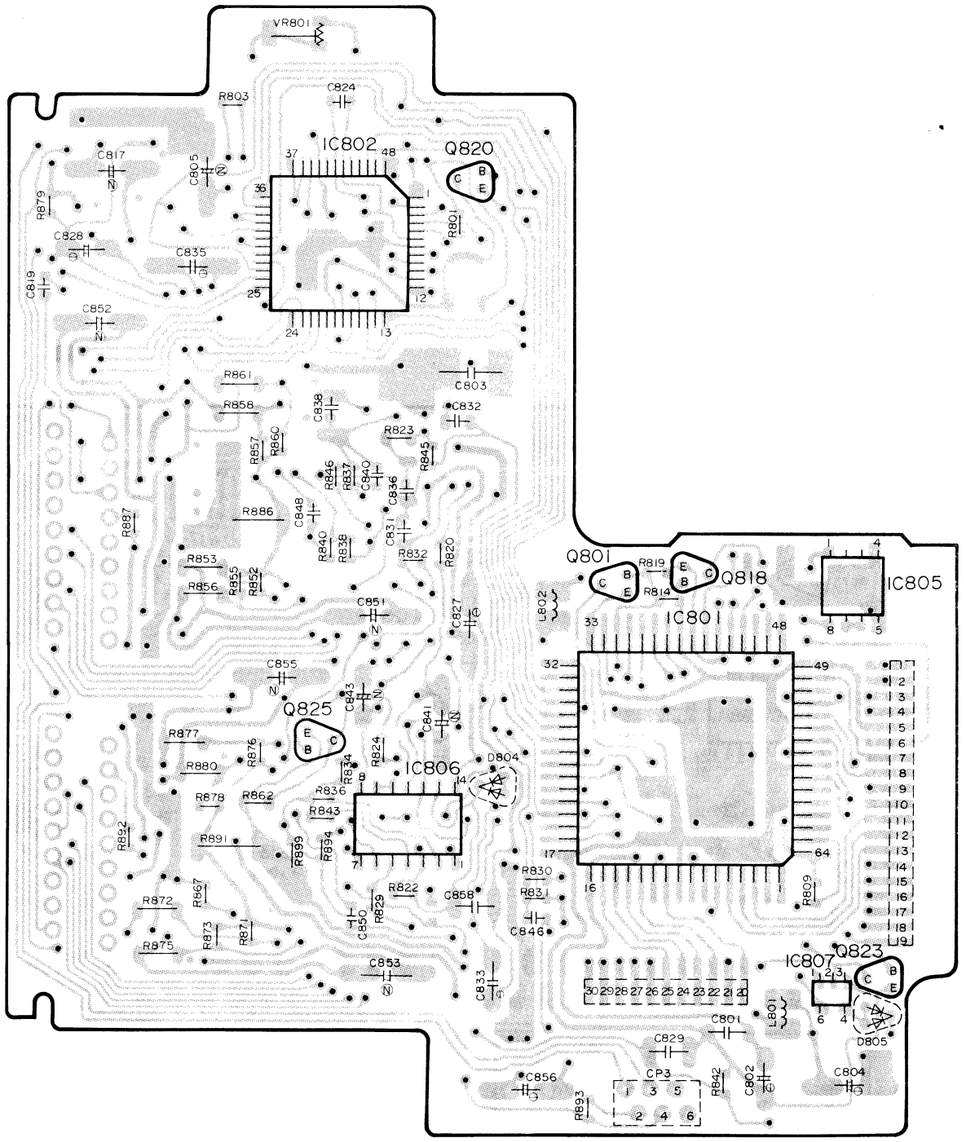
• Solder side



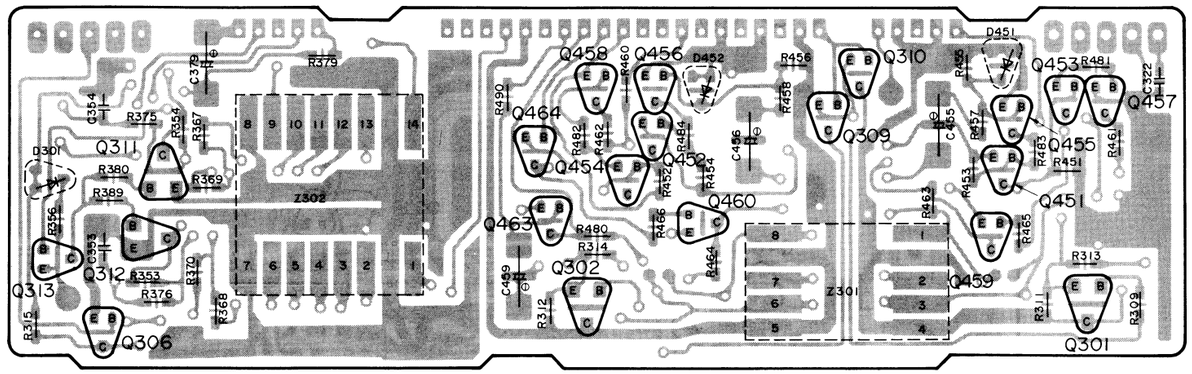
5 6 7 8 9 10 11 12 13 14

C ANALOGUE P.C.B.

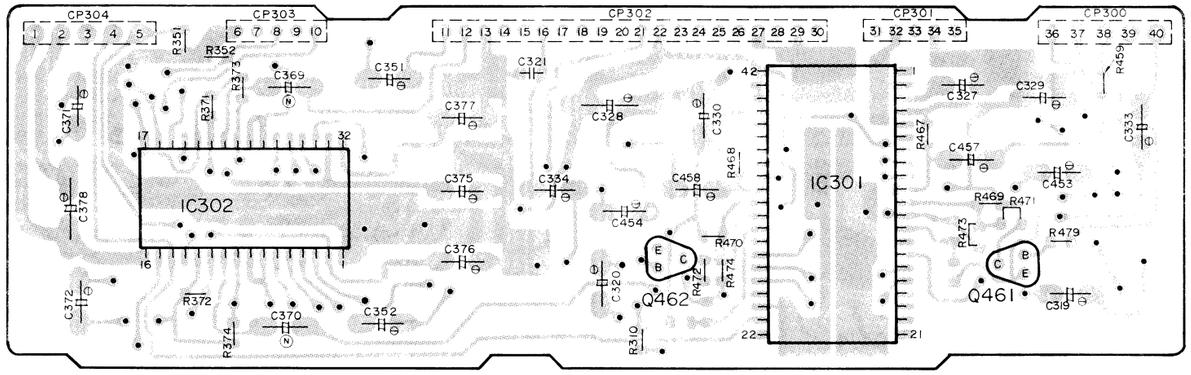
• Solder side



• Parts side



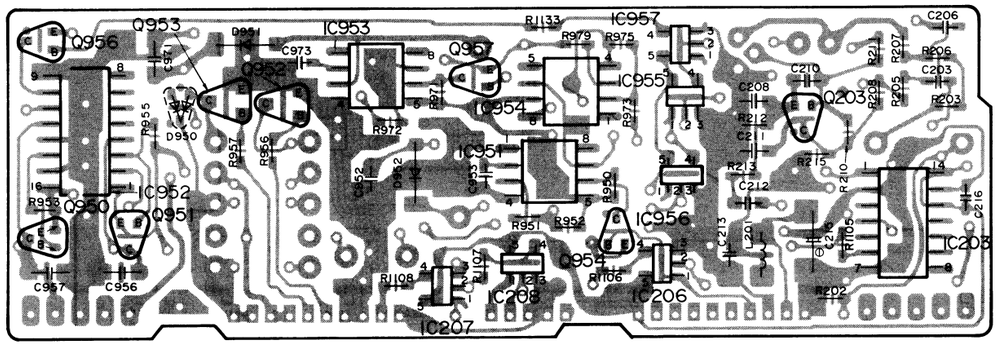
• Solder side



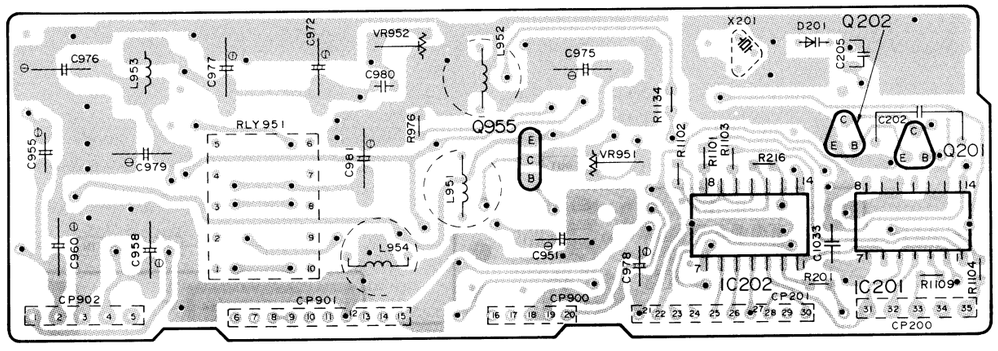
• • Circuit view of bottom of P.C.B.
• — • Circuit view of top of P.C.B.

F POWER SUPPLY/MASTER CLOCK P.C.B.

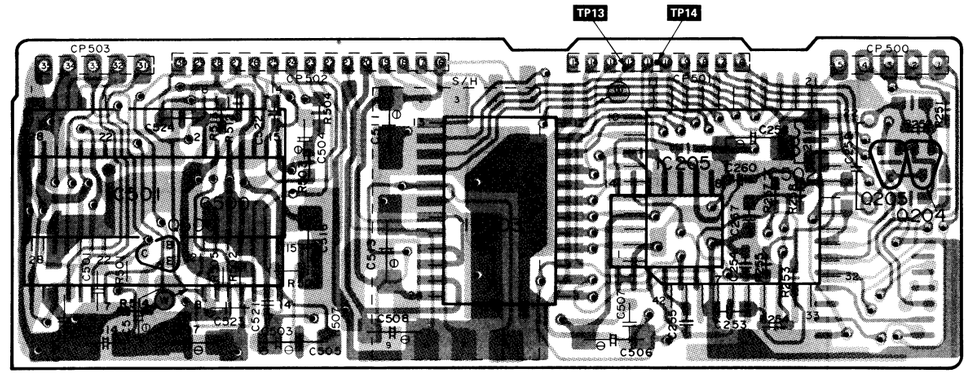
• Parts side



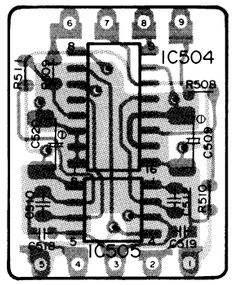
• Solder side



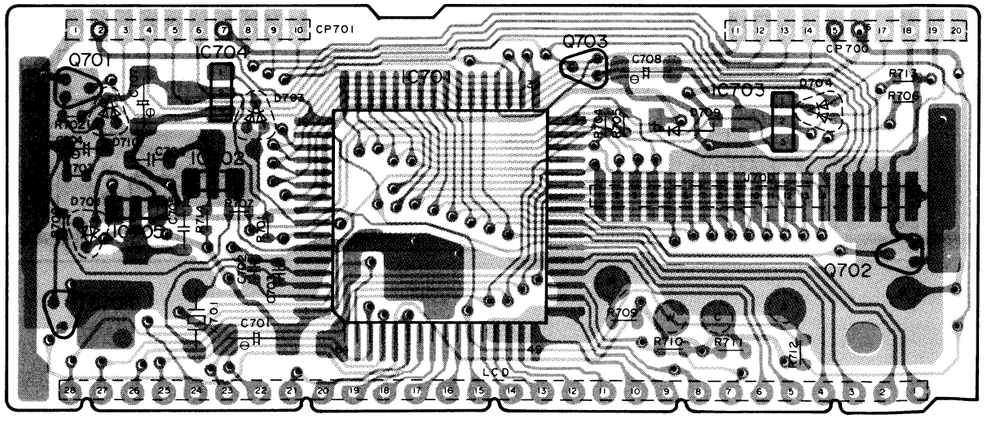
I A-D/D-A P.C.B.



BUFFER AMP P.C.B.



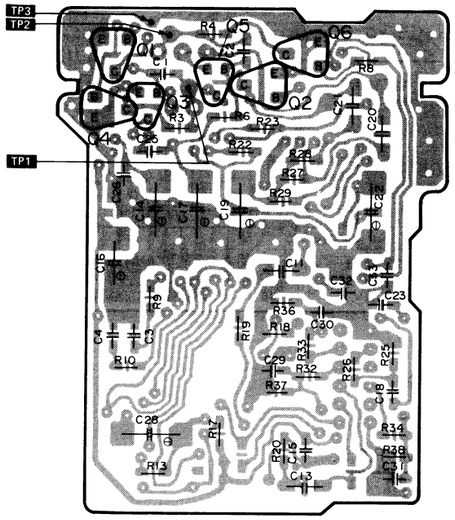
E PANEL CONTROL P.C.B.



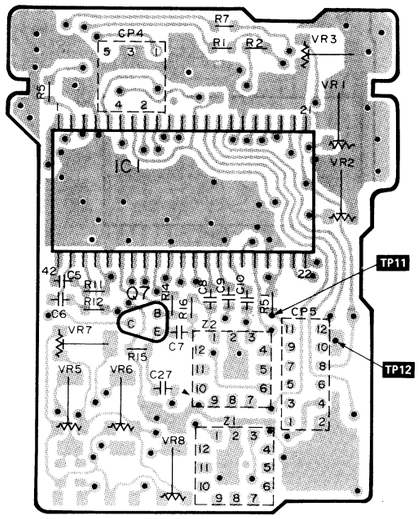
• Circuit view of bottom of P.C.B.
• Circuit view of top of P.C.B.

K RF P.C.B.

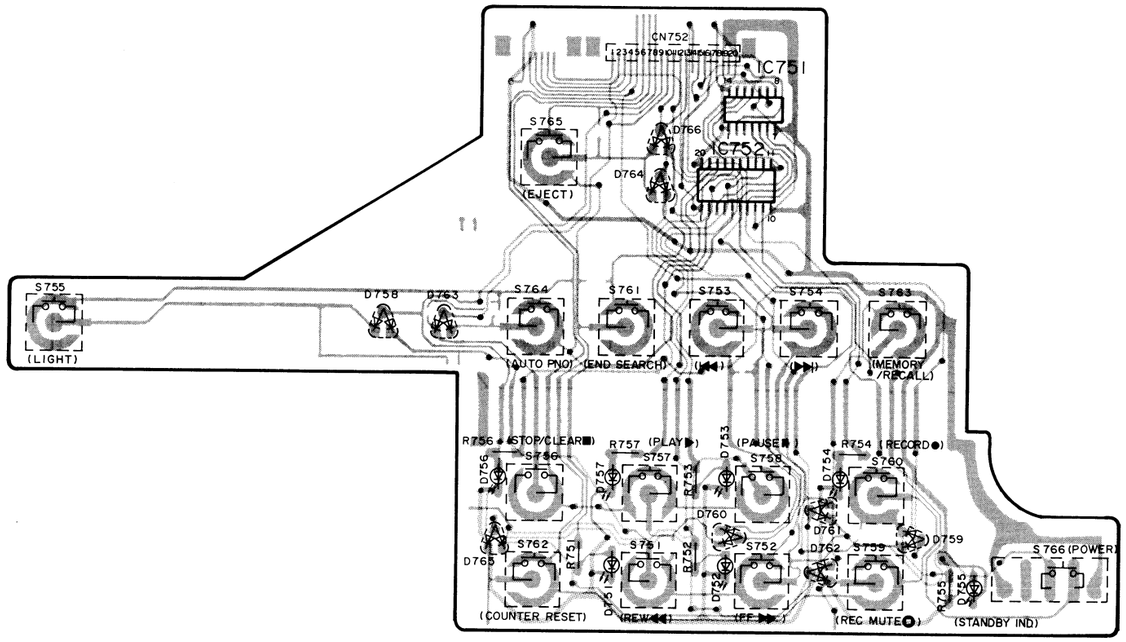
• Parts side



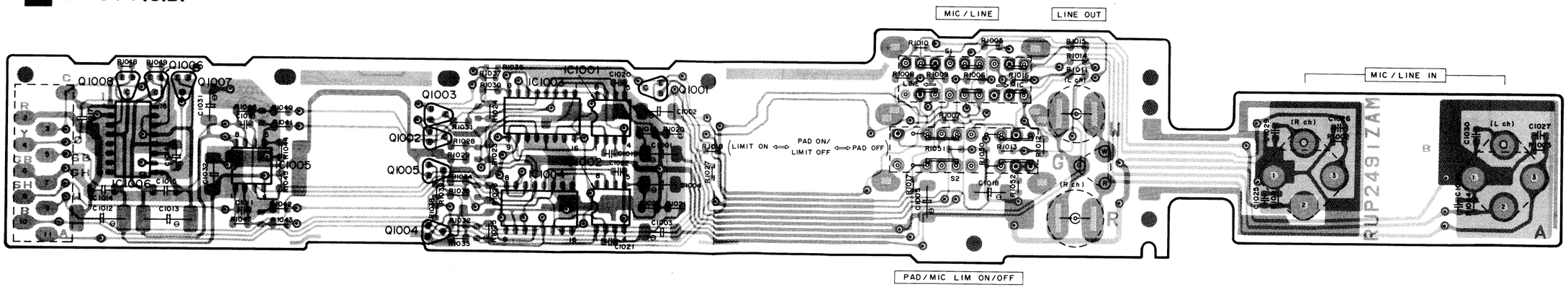
• Solder side



L OPERATION KEY P.C.B.



M INPUT P.C.B.



• • Circuit view of bottom of P.C.B.
• • Circuit view of top of P.C.B.

■ RESISTORS & CAPACITORS

Notes : * Important safety notice :
Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.
* Bracketed indications in Ref. No. columns specify the area. (Refer to the first page for area.)
Parts without these indications can be used for all areas.

Numbering System For Resistors

Example:

ERD	25	F	J	102
Type	Wattage (1/4W)	Shape	Tolerance	Value (1KΩ)

ERX	2	AN	J	471
Type	Wattage (2W)	Shape	Tolerance	Value (470Ω)

Numbering System For Capacitors

Example:

ECKD	1H	102	Z	F
Type	Voltage (50V)	Value (0.001μF)	Tolerance	Unique

ECEA	50	M	330
Type	Voltage (50V)	Characteristics	Value (33μF)

- Capacity values are in microfarads (μF) unless specified otherwise, P = Pico-farads (pF) F = Farads (F).
- Resistance values are in ohms (Ω), unless specified otherwise, 1K = 1,000Ω, 1M = 1,000kΩ

Resistor Type		Wattage		Tolerance
ERD	: Carbon	10 : 1/8W	12 : 1/2W	J : ±5%
ERG	: Metal Oxide	14 : 1/4W	25 : 1/4W	F : ±1%
ERQ	: Fuse Type Metal	1A : 1W	18 : 1/8W	G : ±2%
ERX	: Metal Film	S2 : 1/4W	S1 : 1/2W	J : ±5%
ERD L	: Carbon (chip)	2F : 1/4W	50 : 1/2W	K : ±10%
ERO K	: Metal Film (chip)	2A : 2W	3A : 3W	M : ±20%
ERC	: Solid	6G : 1/10W	8G : 1/8W	
ERF	: Incombustible Box-Shaped			
ERM	: Wire-Wound			
RRJ	: Chip Resistor			
ERJ	: Chip Resistor			

Capacitor Type		Voltage		Tolerance
ECE	: Electrolytic	0J : 6.3V	1A : 10V	K : ±10%
ECCD	: Ceramic	1C : 16V	1E : 25V	M : ±20%
ECKD	: Ceramic Capacitor	1H : 50V	1V : 35V	Z : +80 −20 %
ECQM	: Polyester	50 : 50V	05 : 50V	J : ±5%
ECQP	: Polypropylene	2H : 500V	2A : 100V	G : ±2%
ECG	: Ceramic	1 : 100V	1J : 63V	F : ±1%
ECEA N	: Non Polar Electrolytic	KC : 400V AC		C : ±0.25pF
QCU	: Ceramic (Chip Type)	KC : 125V AC (UL)		D : ±0.5pF
ECUX	: Ceramic (Chip Type)			
ECF	: Semiconductor			
EECW	: Liquid electrolyte double layer capacitor			

Ref. No.	Part No.	Value.
RESISTORS(VALUE,WATTAGE)		
R1	RRJ6GEJ272T	2.7K 1/6
R2	RRJ6GEJ272T	2.7K 1/6
R3	RRJ6GEJ100T	10 1/6
R4	RRJ6GEJ100T	10 1/6
R5	RRJ6GEJ103T	10K 1/6
R6	RRJ6GEJ103T	10K 1/6
R7	RRJ6GEJ392T	3.9K 1/6
R8	RRJ6GEJ392T	3.9K 1/6
R9	RRJ6GEJ151T	150 1/6
R10	RRJ6GEJ151T	150 1/6
R11	RRJ6GEJ331T	330 1/6
R12	RRJ6GEJ331T	330 1/6
R13	RRJ6GEJ332T	3.3K 1/6
R14	RRJ6GEJ101T	100 1/6
R15	RRJ6GEJ102T	1K 1/6
R16	RRJ6GEJ102T	1K 1/6
R17	RRJ6GEJ332T	3.3K 1/6
R18	RRJ6GEJ102T	1K 1/6
R19	RRJ6GEJ102T	1K 1/6
R20	RRJ6GEJ102T	1K 1/6
R22	RRJ6GEJ272T	2.7K 1/6
R23	RRJ6GEJ272T	2.7K 1/6
R25	RRJ6GEJ102T	1K 1/6
R26	RRJ6GEJ102T	1K 1/6
R27	RRJ6GEJ471T	470 1/6
R28	RRJ6GEJ471T	470 1/6
R29	RRJ6GEJ471T	470 1/6
R32	RRJ6GEJ221T	220 1/6
R33	RRJ6GEJ221T	220 1/6
R34	RRJ6GEJ221T	220 1/6
R35	RRJ6GEJ222T	2.2K 1/6
R36	RRJ6GEJ473T	47K 1/6
R37	RRJ6GEJ473T	47K 1/6
R38	RRJ6GEJ473T	47K 1/6
R51	RRJ6GEJ100T	10 1/6
R100	RRJ6GEJ222T	2.2K 1/6
R101	RRJ6GEJ103T	10K 1/6
R103	RRJ6GEJ471T	470 1/6
R104	RRJ6GEJ471T	470 1/6
R105	RRJ6GEJ222T	2.2K 1/6
R106	RRJ6GEJ472T	4.7K 1/6
R107	RRJ6GEJ102T	1K 1/6
R108	RRJ6GEJ102T	1K 1/6
R109	RRJ6GEJ103T	10K 1/6
R110	RRJ6GEJ101T	100 1/6
R111	RRJ6GEJ472T	4.7K 1/6
R112	RRJ6GEJ331T	330 1/6
R113	RRJ6GEJ101T	100 1/6
R114	RRJ6GEJ101T	100 1/6
R116	RRJ6GEJ471T	470 1/6
R119	RRJ6GEJ472T	4.7K 1/6
R121	RRJ6GEJ472T	4.7K 1/6
R123	RRJ6GEJ222T	2.2K 1/6
R124	RRJ6GEJ472T	4.7K 1/6
R125	RRJ6GEJ103T	10K 1/6
R126	RRJ6GEJ222T	2.2K 1/6
R127	RRJ6GEJ222T	2.2K 1/6
R128	RRJ6GEJ561T	560 1/6
R129	RRJ6GEJ472T	4.7K 1/6
R201	RRJ6GEJ472T	4.7K 1/6
R202	RRJ6GEJ332T	3.3K 1/6
R203	RRJ6GEJ682T	6.8K 1/6
R205	RRJ6GEJ152T	1.5K 1/6
R206	RRJ6GEJ682T	6.8K 1/6
R207	RRJ6GEJ333T	33K 1/6
R208	RRJ6GEJ101T	100 1/6
R210	RRJ6GEJ473T	47K 1/6
R211	RRJ6GEJ473T	47K 1/6
R212	RRJ6GEJ152T	1.5K 1/6
R213	RRJ6GEJ471T	470 1/6
R215	RRJ6GEJ330T	33 1/6
R216	RRJ6GEJ105T	1M 1/6
R251	RRJ6GEJ472T	4.7K 1/6
R252	RRJ6GEJ331T	330 1/6
R253	RRJ6GEJ102T	1K 1/6
R254	RRJ6GEJ101T	100 1/6
R255	RRJ6GEJ102T	1K 1/6
R257	RRJ6GEJ102T	1K 1/6
R258	RRJ6GEJ330T	33 1/6
R270	RRJ6GEJ151T	150 1/6
R271	RRJ6GEJ151T	150 1/6
R301	RRJ6GCJ273TE	27K 1/6
R302	RRJ6GCJ273TE	27K 1/6
R303	RRJ6GEJ223T	22K 1/6
R304	RRJ6GEJ223T	22K 1/6
R305	RRJ6GCJ392TE	3.9K 1/6
R306	RRJ6GCJ392TE	3.9K 1/6
R307	RRJ6GCJ223TE	22K 1/6
R308	RRJ6GCJ223TE	22K 1/6
R309	RRJ6GEJ103T	10K 1/6
R310	RRJ6GEJ103T	10K 1/6
R311	RRJ6GEJ104T	100K 1/6
R312	RRJ6GEJ104T	100K 1/6
R313	RRJ6GEJ102T	1K 1/6
R314	RRJ6GEJ102T	1K 1/6
R315	RRJ6GEJ473T	47K 1/6
R317	RRJ6GEJ103T	10K 1/6
R318	RRJ6GEJ103T	10K 1/6
R319	RRJ6GEJ102T	1K 1/6
R320	RRJ6GEJ102T	1K 1/6
R321	RRJ6GEJ472T	4.7K 1/6
R322	RRJ6GEJ472T	4.7K 1/6
R323	RRJ6GEJ471T	470 1/6
R324	RRJ6GEJ471T	470 1/6
R328	RRJ6GEJ103T	10K 1/6
R330	RRJ6GEJ103T	10K 1/6
R331	RRJ6GEJ103T	10K 1/6
R332	RRJ6GEJ103T	10K 1/6
R334	RRJ6GEJ103T	10K 1/6
R335	RRJ6GCJ273TE	27K 1/6
R336	RRJ6GCJ273TE	27K 1/6
R337	RRJ6GEJ221T	220 1/6
R338	RRJ6GEJ221T	220 1/6
R339	RRJ6GEJ104T	100K 1/6
R340	RRJ6GEJ104T	100K 1/6
R341	RRJ6GEJ104T	100K 1/6
R342	RRJ6GEJ104T	100K 1/6
R343	RRJ6GEJ473T	47K 1/6
R344	RRJ6GEJ473T	47K 1/6
R345	RRJ6GEJ102T	1K 1/6
R346	RRJ6GEJ102T	1K 1/6
R347	RRJ6GEJ102T	1K 1/6
R348	RRJ6GEJ102T	1K 1/6
R349	RRJ6GEJ182T	1.8K 1/6

Ref. No.	Part No.	Value.
R350	RRJ6GEJ182T	1.8K 1/6
R351	RRJ6GEJ104T	100K 1/6
R352	RRJ6GEJ104T	100K 1/6
R353	RRJ6GEJ681T	680 1/6
R354	RRJ6GEJ681T	680 1/6
R356	RRJ6GEJ471T	470 1/6
R357	RRJ6GCAD273T	27K 1/6
R358	RRJ6GCAD273T	27K 1/6
R359	RRJ6GEJ102T	1K 1/6
R360	RRJ6GEJ102T	1K 1/6
R361	RRJ6GEJ681T	680 1/6
R362	RRJ6GEJ681T	680 1/6
R363	RRJ6GEJ101T	100 1/6
R364	RRJ6GEJ101T	100 1/6
R365	RRJ6GEJ182T	1.8K 1/6
R366	RRJ6GEJ182T	1.8K 1/6
R367	RRJ6GEJ183T	18K 1/6
R368	RRJ6GEJ183T	18K 1/6
R369	RRJ6GEJ183T	18K 1/6
R370	RRJ6GEJ183T	18K 1/6
R371	RRJ6GEJ103T	10K 1/6
R372	RRJ6GEJ103T	10K 1/6
R373	RRJ6GEJ153T	15K 1/6
R374	RRJ6GEJ153T	15K 1/6
R375	RRJ6GEJ561T	560 1/6
R376	RRJ6GEJ561T	560 1/6
R377	RRJ6GEJ224T	220K 1/6
R378	RRJ6GEJ224T	220K 1/6
R380	RRJ6GEJ472T	4.7K 1/6
R381	RRJ6GEJ822T	8.2K 1/6
R382	RRJ6GEJ822T	8.2K 1/6
R383	RRJ6GEJ221T	220 1/6
R384	RRJ6GEJ221T	220 1/6
R385	RRJ6GCJ2R2TE	2.2 1/6
R386	RRJ6GCJ2R2TE	2.2 1/6
R387	RRJ6GEJ180T	18 1/6
R388	RRJ6GEJ180T	18 1/6
R389	RRJ6GEJ472T	4.7K 1/6
R390	RRJ6GEJ102T	1K 1/6
R391	RRJ6GEJ102T	1K 1/6
R392	RRJ6GEJ103T	10K 1/6
R393	RRJ6GEJ103T	10K 1/6
R394	RRJ6GEJ100T	10 1/6
R395	RRJ6GEJ223T	22K 1/6
R396	RRJ6GEJ223T	22K 1/6
R397	RRJ6GEJ472T	4.7K 1/6
R398	RRJ6GEJ472T	4.7K 1/6
R402	RRJ6GEJ105T	1M 1/6
R403	RRJ6GEJ105T	1M 1/6
R451	RRJ6GEJ104T	100K 1/6
R452	RRJ6GEJ104T	100K 1/6
R453	RRJ6GEJ473T	47K 1/6
R454	RRJ6GEJ473T	47K 1/6
R455	RRJ6GEJ473T	47K 1/6
R456	RRJ6GEJ473T	47K 1/6
R457	RRJ6GEJ223T	22K 1/6
R458	RRJ6GEJ223T	22K 1/6
R459	RRJ6GEJ103T	10K 1/6
R460	RRJ6GEJ103T	10K 1/6
R461	RRJ6GEJ680T	68 1/6
R462	RRJ6GEJ680T	68 1/6
R463	RRJ6GEJ473T	47K 1/6
R464	RRJ6GEJ473T	47K 1/6
R465	RRJ6GEJ472T	4.7K 1/6
R466	RRJ6GEJ472T	4.7K 1/6
R467	RRJ6GEJ473T	47K 1/6
R468	RRJ6GEJ473T	47K 1/6
R469	RRJ6GEJ822T	8.2K 1/6
R470	RRJ6GEJ822T	8.2K 1/6
R471	RRJ6GEJ681T	680 1/6
R472	RRJ6GEJ681T	680 1/6
R473	RRJ6GEJ223T	22K 1/6
R474	RRJ6GEJ223T	22K 1/6
R479	RRJ6GEJ472T	4.7K 1/6
R480	RRJ6GEJ472T	4.7K 1/6
R481	RRJ6GEJ101T	100 1/6
R482	RRJ6GEJ101T	100 1/6
R485	RRJ6GEJ100T	10 1/6
R486	RRJ6GEJ103T	10K 1/6
R487	RRJ6GEJ104T	100K 1/6
R488	RRJ6GEJ104T	100K 1/6
R489	RRJ6GEJ102T	1K 1/6
R490	RRJ6GEJ472T	4.7K 1/6
R501	RRJ6GEJ472T	4.7K 1/6
R502	RRJ6GEJ153T	15K 1/6
R503	RRJ6GCJ223TE	22K 1/6
R504	RRJ6GCJ103TE	10K 1/6
R505	RRJ6GEJ103T	10K 1/6
R506	RRJ6GCJ223TE	22K 1/6
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R508	RRJ6GCJ222TE	2.2K 1/6
R509	RRJ6GCJ222TE	2.2K 1/6
R510	RRJ6GCJ102TE	1K 1/6
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R512	RRJ6GEJ153T	15K 1/6
R513	RRJ6GEJ103T	10K 1/6
R514	RRJ6GEJ472T	4.7K 1/6
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R556	RRJ6GEJ103T	10K 1/6
R557	RRJ6GCJ103TE	10K 1/6
R558	RRJ6GCJ103TE	10K 1/6
R600	RRJ6GEJ103T	10K 1/6
R601	RRJ6GCJ102TE	1K 1/6
R602	RRJ6GEJ473T	47K 1/6
R603	RRJ6GEJ473T	47K 1/6
R604	RRJ6GEJ222T	2.2K 1/6
R605	RRJ6GEJ102T	1K 1/6
R606	RRJ6GEJ102T	1K 1/6
R607	RRJ6GEJ333T	33K 1/6
R609	RRJ6GEJ101T	100 1/6
R613	RRJ6GEJ221T	220 1/6
R614	RRJ6GEJ102T	1K 1/6
R615	RRJ6GEJ103T	10K 1/6
R616	RRJ6GEJ103T	10K 1/6
R617	RRJ6GEJ223T	22K 1/6
R618	RRJ6GEJ103T	10K 1/6
R619	RRJ6GEJ222T	2.2K 1/6
R620	RRJ6GEJ473T	47K 1/6
R621	RRJ6GEJ473T	47K 1/6
R622	RRJ6GEJ473T	47K 1/6
R626	RRJ6GEJ473T	47K 1/6
R627	RRJ6GEJ473T	47K 1/6
R628	RRJ6GEJ473T	47K 1/6
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R630	RRJ6GEJ473T	47K 1/6
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R632	RRJ6GEJ473T	47K 1/6
R633	RRJ6GEJ473T	47K 1/6
R638	RRJ6GEJ103T	10K 1/6
R639	RRJ6GEJ221T	220 1/6
R641	RRJ6GEJ221T	220 1/6
R645	RRJ6GEJ102T	1K 1/6
R646	RRJ6GEJ102T	1K 1/6
R651	RRJ6GEJ150T	15 1/6
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R655	RRJ6GEJ223T	22K 1/6
R658	RRJ6GEJ104T	100K 1/6
R659	RRJ6GEJ104T	100K 1/6
R660	RRJ6GEJ104T	100K 1/6
R663	RRJ6GEJ104T	100K 1/6
R665	RRJ6GEJ104T	100K 1/6
R666	RRJ6GEJ104T	100K 1/6
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R668	RRJ6GEJ333T	33K 1/6
R669	RRJ6GEJ473T	47K 1/6
R670	RRJ6GEJ473T	47K 1/6
R671	RRJ6GEJ473T	47K 1/6
R672	RRJ6GEJ222T	2.2K 1/6
R673	RRJ6GEJ472T	4.7K 1/6
R674	RRJ6GEJ473T	47K 1/6
R675	RRJ6GEJ223T	22K 1/6
R676	RRJ6GEJ104T	100K 1/6
R677	RRJ6GCJ271TE	270 1/6
R678	RRJ6GEJ472T	4.7K 1/6
R679	RRJ6GEJ222T	2.2K 1/6
R680	RRJ6GEJ221T	220 1/6
R681	RRJ6GCJ1R0TE	1 1/6
R682	RRJ6GEJ473T	47K 1/6
R683	RRJ6GEJ221T	220 1/6
R684	RRJ6GEJ153T	15K 1/6
R685	RRJ6GCJ1R0TE	1 1/6
R686	RRJ6GCJ271TE	270 1/6
R687	RRJ6GEJ223T	22K 1/6
R688	RRJ6GCJ681TE	680 1/6
R690	RRJ6GEJ473T	47K 1/6
R691	RRJ6GEJ562T	5.6K 1/6
R692	RRJ6GEJ153T	15K 1/6
R693	RRJ6GEJ101T	100 1/6
R695	RRJ6GEJ101T	100 1/6
R696	RRJ6GEJ153T	15K 1/6
R697	RRJ6GEJ562T	5.6K 1/6
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R702	RRJ6GEJ473T	47K 1/6
R703	RRJ6GEJ473T	47K 1/6
R704	RRJ6GEJ103T	10K 1/6
R705	RRJ6GEJ103T	10K 1/6
R706	RRJ6GEJ103T	10K 1/6
R707	RRJ6GEJ272T	2.7K 1/6
R708	RRJ6GEJ473T	47K 1/6
R709	RRJ6GCJ221TE	220 1/6
R710	RRJ6GCJ221TE	220 1/6
R711	RRJ6GCJ221TE	220 1/6
R712	RRJ6GCJ221TE	220 1/6
R713	RRJ6GEJ470T	47 1/6
R714	RRJ6GEJ103T	10K 1/6
R751	ERJ8GEYJ331V	330 1/8
R752	ERJ8GEYJ331V	330 1/8
R753	ERJ8GEYJ331V	330 1/8
R754	ERJ8GEYJ331V	330 1/8
R755	ERF8GEYJ681V	680 1/8
R756	ERJ8GEYJ331V	330 1/8
R757	ERJ8GEYJ331V	330 1/8
R801	RRJ6GEJ221T	220 1/6
R802	RRJ6GEJ474T	470K 1/6
R803	RRJ6GEJ222T	2.2K 1/6
R804	RRJ6GEJ223T	22K 1/6
R805	RRJ6GEJ104T	100K 1/6
R806	RRJ6GEJ124T	120K 1/6
R807	RRJ6GEJ182T	1.8K 1/6
R808	RRJ6GEJ104T	100K 1/6
R809	RRJ6GEJ103T	10K 1/6
R810	RRJ6GEJ222T	2.2K 1/6
R811	RRJ6GEJ122T	1.2K 1/6
R812	RRJ6GEJ124T	120K 1/6
R813	RRJ6GEJ473T	47K 1/6
R814	RRJ6GEJ103T	10K 1/6
R815	RRJ6GEJ683T	68K 1/6
R816	RRJ6GEJ273T	27K 1/6
R817	RRJ6GEJ223T	22K 1/6
R818	RRJ6GEJ474T	470K 1/6
R819	RRJ6GEJ103T	10K 1/6
R820	RRJ6GEJ333T	33K 1/6
R821	RRJ6GEJ472T	4.7K 1/6
R822	RRJ6GEJ104T	100K 1/6
R823	RRJ6GCJ335TE	3.3M 1/6
R824	RRJ6GCJ155TE	1.5M 1/6
R825	RRJ6GEJ223T	22K 1/6
R826	RRJ6GEJ223T	22K 1/6
R827	RRJ6GCJ225TE	2.2M 1/6
R828	RRJ6GCJ225TE	2.2M 1/6
R829	RRJ6GEJ100T	10 1/6
R830	RRJ6GEJ222T	2.2K 1/6
R831	RRJ6GEJ222T	2.2K 1/6
R832	RRJ6GEJ153T	15K 1/6

Ref. No.	Part No.	Value.
R833	RRJ6GEJ102T	1K 1/6
R834	RRJ6GEJ823T	82K 1/6
R835	RRJ6GEJ183T	18K 1/6
R836	RRJ6GEJ682T	6.8K 1/6
R837	RRJ6GEJ334T	330K 1/6
R838	RRJ6GEJ333T	33K 1/6
R839	RRJ6GEJ561T	560 1/6
R840	RRJ6GEJ222T	2.2K 1/6
R841	RRJ6GEJ334T	330K 1/6
R842	RRJ6GEJ224T	220K 1/6
R843	RRJ6GEJ332T	3.3K 1/6
R844	RRJ6GEJ333T	33K 1/6
R845	RRJ6GEJ104T	100K 1/6
R846	RRJ6GEJ334T	330K 1/6
R847	RRJ6GEJ123T	12K 1/6
R848	RRJ6GEJ123T	12K 1/6
R849	RRJ6GEJ474T	470K 1/6
R850	RRJ6GEJ123T	12K 1/6
R851	RRJ6GEJ123T	12K 1/6
R852	RRJ6GEJ123T	12K 1/6
R853	RRD18XJ101V	100 1/8
R854	RRJ6GEJ472T	4.7K 1/6
R855	RRJ6GEJ123T	12K 1/6
R856	RRD18XJ101V	100 1/8
R857	RRJ6GEJ123T	12K 1/6
R858	RRD18XJ101V	100 1/8
R859	RRJ6GEJ680T	68 1/6
R860	RRJ6GEJ123T	12K 1/6
R861	RRD18XJ101V	100 1/8
R862	RRJ6GCJ335TE	3.3M 1/6
R863	RRJ6GEJ333T	33K 1/6
R864	RRJ6GEJ562T	5.6K 1/6
R865	RRJ6GEJ823T	82K 1/6
R866	RRJ6GEJ123T	12K 1/6
R867	RRJ6GEJ123T	12K 1/6
R868	RRJ6GEJ123T	12K 1/6
R870	RRJ6GEJ123T	12K 1/6
R871	RRJ6GEJ123T	12K 1/6
R872	RRD18XJ101V	100 1/8
R873	RRJ6GEJ123T	12K 1/6
R874	RRJ6GEJ472T	4.7K 1/6
R875	RRD18XJ101V	100 1/8
R876	RRJ6GEJ123T	12K 1/6
R877	RRD18XJ101V	100 1/8
R878	RRJ6GEJ123T	12K 1/6
R879	RRJ6GEJ472T	4.7K 1/6
R880	RRD18XJ101V	100 1/8
R881	RRJ6GEJ104T	100K 1/6
R882	RRJ6GEJ472T	4.7K 1/6
R883	RRJ6GEJ472T	4.7K 1/6
R885	RRJ6GEJ331T	330 1/6
R886	RRJ2GCK1R0TE	1
R887	RRJ6GEJ221T	220 1/6
R888	RRJ6GEJ473T	47K 1/6
R890	RRJ6GEJ331T	330 1/6
R891	RRJ2GCK1R0TE	1
R892	RRJ6GEJ221T	220 1/6
R893	RRJ6GEJ680T	68 1/6
R894	RRJ6GEJ154T	150K 1/6
R896	RRJ6GEJ680T	68 1/6
R899	RRJ6GEJ682T	6.8K 1/6
R950	RRJ6GEJ824T	820K 1/6
R951	RRJ6GEJ471T	470 1/6
R952	RRJ6GEJ331T	330 1/6
R953	RRJ6GEJ473T	47K 1/6
R955	RRJ6GEJ473T	47K 1/6
R956	RRJ6GEJ472T	4.7K 1/6
R957	RRJ6GEJ472T	4.7K 1/6
R971	RRJ6GEJ824T	820K 1/6
R972	RRJ6GEJ224T	220K 1/6
R973	RRJ6GEJ124T	120K 1/6
R975	RRJ6GEJ564T	560K 1/6
R976	RRJ6GEJ473T	47K 1/6
R979	RRJ6GEJ104T	100K 1/6
R1001	RRJ6GEJ104T	100K 1/6
R1002	RRJ6GEJ104T	100K 1/6
R1003	RRJ6GEJ104T	100K 1/6
R1004	RRJ6GEJ104T	100K 1/6
R1005	RRJ6GCAD472T	4.7K 1/6
R1006	RRJ6GCAD153T	15K 1/6
R1007	RRJ6GEJ182T	1.8K 1/6
R1008	RRJ6GCAD472T	4.7K 1/6
R1009	RRJ6GCAD153T	15K 1/6
R1010	RRJ6GEJ681T	680 1/6
R1011	RRJ6GCAD472T	4.7K 1/6
R1012	RRJ6GCAD153T	15K 1/6
R1013	RRJ6GEJ182T	1.8K 1/6
R1014	RRJ6GCAD472T	4.7K 1/6
R1015	RRJ6GCAD153T	15K 1/6
R1016	RRJ6GEJ681T	680 1/6
R1017	RRJ6GEJ681T	680 1/6
R1018	RRJ6GEJ473T	47K 1/6
R1019	RRJ6GCAD223T	22K 1/6
R1020	RRJ6GCAD223T	22K 1/6
R1021	RRJ6GCAD223T	22K 1/6
R1022	RRJ6GCAD223T	22K 1/6
R1023	RRJ6GCAD562T	5.6K 1/6
R1024	RRJ6GCAD562T	5.6K 1/6
R1025	RRJ6GCAD562T	5.6K 1/6
R1026	RRJ6GCAD562T	5.6K 1/6
R1027	RRJ6GEJ473T	47K 1/6
R1028	RRJ6GCAD121T	120 1/6
R1029	RRJ6GCAD471T	470 1/6
R1030	RRJ6GCAD471T	470 1/6
R1031	RRJ6GCAD121T	120 1/6
R1032	RRJ6GCAD121T	120 1/6
R1033	RRJ6GCAD471T	470 1/6
R1034	RRJ6GCAD471T	470 1/6
R1035	RRJ6GCAD121T	120 1/6
R1036	RRJ6GEJ103T	10K 1/6
R1038	RRJ6GEJ103T	10K 1/6
R1039	RRJ6GEJ103T	10K 1/6
R1040	RRJ6GCAD103T	10K 1/6
R1041	RRJ6GCAD103T	10K 1/6
R1042	RRJ6GCAD103T	10K 1/6
R1043	RRJ6GCAD103T	10K 1/6
R1044	RRJ6GCAD472T	4.7K 1/6
R1045	RRJ6GCAD472T	4.7K 1/6
R1046	RRJ6GCAD472T	4.7K 1/6
R1047	RRJ6GCAD472T	4.7K 1/6
R1048	RRJ6GEJ473T	47K 1/6
R1049	RRJ6GEJ473T	47K 1/6
R1050	RRJ6GEJ101T	100 1/6
R1051	RRJ6GEJ273T	27K 1/6
R1052	RRJ6GEJ273T	27K 1/6
R1101	RRJ6GEJ331T	330 1/6
R1102	RRJ6GEJ331T	330 1/6
R1103	RRJ6GEJ331T	330 1/6
R1104	RRJ6GEJ331T	330 1/6
R1105	RRJ6GEJ102T	1K 1/6
R1106	RRJ6GEJ102T	1K 1/6
R1107	RRJ6GEJ331T	330 1/6
R1108	RRJ6GEJ331T	330 1/6
R1109	RRJ6GEJ331T	330 1/6
R1111	RRJ6GEJ102T	1K 1/6
R1113	RRJ6GEJ102T	1K 1/6
R1114	RRJ6GEJ102T	1K 1/6
R1115	RRJ6GEJ102T	1K 1/6
R1116	RRJ6GEJ102T	1K 1/6
R1117	RRJ6GEJ102T	1K 1/6
R1118	RRJ6GEJ102T	1K 1/6
R1119	RRJ6GEJ102T	1K 1/6
R1120	RRJ6GEJ102T	1K 1/6
R1121	RRJ6GEJ102T	1K 1/6
R1122	RRJ6GEJ102T	1K 1/6
R1123	RRJ6GEJ102T	1K 1/6
R1124	RRJ6GEJ102T	1K 1/6
R1125	RRJ6GEJ102T	1K 1/6
R1126	RRJ6GEJ102T	1K 1/6
R1127	RRJ6GEJ331T	330 1/6
R1128	RRJ6GEJ331T	330 1/6
R1129	RRJ6GEJ331T	330 1/6
R1130	RRJ6GEJ102T	1K 1/6
R1131	RRJ6GEJ102T	1K 1/6
R1132	RRJ6GEJ102T	1K 1/6
R1133	RRJ6GEJ102T	1K 1/6
R1134	RRJ6GEJ102T	1K 1/6
R1135	RRJ6GEJ102T	1K 1/6
R1137	RRJ6GEJ102T	1K 1/6
R1307	RRJ6GEJ103T	10K 1/6
CAPACITORS(VALUE,VOLTAGE)		
C1	RCUS1E103MD	0.01 25
C2	RCUS1E103MD	0.01 25
C3	RCUS1H222MD	0.0022 50
C4	RCUS1H222MD	0.0022 50
C5	RCUS1E103MD	0.01 25
C6	RCUS1E103MD	0.01 25
C7	RCUS1E103MD	0.01 25
C8	RCUS1H102KB	0.001 50
C9	RCUS1E103MD	0.01 25
C10	RCUS1E103MD	0.01 25
C11	ECUV1E104MD	0.1 25
C13	ECUV1E104MD	0.1 25
C14	ECST0GB106RR	10 4
C15	RCUS1E103MD	0.01 25
C16	ECST1AB685RR	6.8 10
C17	ECST0GB106RR	10 4
C18	RCUS1H222MD	0.0022 50
C19	ECST1AB685RR	6.8 10
C20	ECUV1E104MD	0.1 25
C21	ECUV1E104MD	0.1 25
C22	ECST1CB475RR	4.7 16
C23	RCUS1E103MD	0.01 25
C25	RCUS1E103MD	0.01 25
C26	RCUS1E103MD	0.01 25
C27	RCUS1E103MD	0.01 25
C28	ECST1AB685RR	6.8 10
C29	RCUS1H471KB	470P 50
C30	RCUS1H471KB	470P 50
C31	RCUS1H471KB	470P 50
C32	RCUS1H471KB	470P 50
C33	RCUS1H471KB	470P 50
C100	RCUS1E103MD	0.01 25
C101	RCUS1H102KB	0.001 50
C102	RCUS1E103MD	0.01 25
C103	RCUS1E103MD	0.01 25
C104	RCUS1E103MD	0.01 25
C105	RCUS1H221KB	220P 50
C106	RCUV1E333MD	0.033 25
C107	RCUS1H101KC	100P 50
C109	RCSE1CT105RE	1 16
C110	RCSE1CT105RE	1 16
C111	ECST0GB106RR	10 4
C112	RCUS1H102KB	0.001 50
C117	RCUS1H270KC	27P 50
C118	ECUV1E224ZF	0.22 25
C119	ECUV1E224ZF	0.22 25
C124	RCUS1H102KB	0.001 50
C125	RCUS1H020CC	2P 50
C126	ECST0GB106RR	10 4
C127	RCUS1E103MD	0.01 25
C202	ECQM1H474JZ	0.47 50
C203	RCUS1E103MD	0.01 25
C205	ECUV1E224ZF	0.22 25
C206	RCUS1E103MD	0.01 25
C208	RCUV1H560JC	56P 50
C210	RCUV1H101JC	100P 50
C211	RCUV1E333MD	0.033 25
C212	RCUV1H220KC	22P 50
C213	RCUS1E103MD	0.01 25
C215	ECST1AB685RR	6.8 10
C216	RCUS1E103MD	0.01 25
C217	RCUS1H150KC	15P 50
C218	RCUS1H470KC	47P 50
C219	RCUV1H221K	220P 50
C252	ECQM1H474JZ	0.47 50
C253	ECUV1E224ZF	0.22 25
C254	RCUS1H102KB	0.001 50
C255	RCUS1H220KC	22P 50
C257	RCUV1E333ZF	0.033 25

Ref. No.	Part No.	Value.
C258	ECST1AB685RR	6.8 10
C260	RCUS1E103MD	0.01 25
C270	RCSE1ET474RE	0.47 25
C271	RCSE1ET474RE	0.47 25
C301	ECEA1CBD100	10 16
C302	ECEA1CBD100	10 16
C305	RCUS1H101KC	100P 50
C306	RCUS1H101KC	100P 50
C307	RCUS1H101K	100P 50
C308	RCUS1H101K	100P 50
C309	ECEV1CP100R	10 16
C310	ECEV1CP100R	10 16
C311	ECST0GB106RR	10 4
C312	ECST0GB106RR	10 4
C315	ECEV1CP100R	10 16
C316	ECEV1CP100R	10 16
C319	ECEV1CP100R	10 16
C320	ECEV1CP100R	10 16
C321	RCUS1H101KC	100P 50
C322	RCUS1H101KC	100P 50
C323	ECEA0JK221	220 6.3
C327	ECEV0GP470R	47 4
C328	ECEV1CP470P	47 16
C329	ECEV0GP470R	47 4
C330	ECEV0GP470R	47 4
C331	RCUS1H102KB	0.001 50
C332	RCUS1E103MD	0.01 25
C333	ECEV1CP100R	10 16
C334	ECEV1CP100R	10 16
C339	RCUS1E103MD	0.01 25
C340	RCUS1E103MD	0.01 25
C341	ECST0GB106RR	10 4
C342	ECST0GB106RR	10 4
C343	ECST1AC106R	10 10
C344	ECST1AC106R	10 10
C345	ECEA1CPD100	10 16
C346	ECEA1CPD100	10 16
C347	RCUS1H470KC	47P 50
C348	RCUS1H470KC	47P 50
C349	ECEA1CPD100	10 16
C350	ECST1AC106R	10 10
C351	ECEV1CP100R	10 16
C352	ECEV1CP100R	10 16
C353	RCUS1H101K	100P 50
C354	RCUS1H101K	100P 50
C355	RCUS1H101K	100P 50
C356	RCUS1H101K	100P 50
C357	ECEA1CPD100	10 16
C358	ECST0GB106RR	10 4
C359	ECEA0JPD470	47 6.3
C360	ECEA0JPD470	47 6.3
C361	RCUS1H101K	100P 50
C362	RCUS1H101K	100P 50
C363	ECST1AB685RR	6.8 10
C364	ECST1AB685RR	6.8 10
C365	ECEA1CPD100	10 16
C369	ECEV1EPN4R7R	4.7 25
C370	ECEV1EPN4R7R	4.7 25
C371	ECEV1CP100R	10 16
C372	ECEV1CP100R	10 16
C375	ECEV0GP470R	47 4
C376	ECEV0GP470R	47 4
C377	ECEV0GP470R	47 4
C378	ECEV1CP470P	47 16
C379	ECST0JB106R	10 6.3
C380	ECEA1CPD100	10 16
C381	ECEV0JP101P	100 6.3
C382	ECEV0JP101P	100 6.3
C383	ECEV0JP101P	100 6.3
C384	RCUS1H330KC	33P 50
C385	RCUS1H330KC	33P 50
C386	ECEA0JPU331	330 6.3
C387	ECEA0JPU331	330 6.3
C388	ECUV1E104ZF	0.1 25
C389	ECUV1E104ZF	0.1 25
C390	RCUS1H102KB	0.001 50
C391	ECEV1CP100R	10 16
C392	RCUS1H331K	330P 50
C393	RCSE0GT475RE	0.47 4
C394	RCSE0GT475RE	0.47 4
C395	ECST1AB685RR	6.8 10
C396	ECST1AB685RR	6.8 10
C397	RCUS1H331K	330P 50
C398	RCUS1H331K	330P 50
C399	RCUS1H331K	330P 50
C401	ECST1AC106R	10 10
C402	ECST1AC106R	10 10
C403	RCUV1H680KC	68P 50
C404	RCUV1H680KC	68P 50
C405	RCUV1H270JC	27P 50
C406	RCUV1H270JC	27P 50
C407	ECUV1C105ZF	1 16
C408	ECUV1C105ZF	1 16
C409	ECUV1C105ZF	1 16
C411	ECUV1C105ZF	1 16
C412	ECUV1C105ZF	1 16
C413	ECUV1C105ZF	1 16
C414	ECUV1C105ZF	1 16
C453	ECEV0JA220R	22 6.3
C454	ECEV0JA220R	22 6.3
C455	ECST0GB106RR	10 4
C456	ECST0GB106RR	10 4
C457	ECEV1CP100R	10 16
C458	ECEV1CP100R	10 16
C459	ECST0GB106RR	10 4
C460	RCSE1CT105RE	1 16
C461	ECST0JB106R	10 6.3
C501	ECUV1E104ZF	0.1 25
C502	ECST1CB475RR	4.7 16
C503	RCSE0GT475RE	0.47 4
C504	RCSE0GT475RE	0.47 4
C505	ECST1AB685RR	6.8 10
C506	ECST1CB475RR	4.7 16
C507	ECUV1E104ZF	0.1 25
C508	ECST1CB475RR	4.7 16
C509	ECST1CB475RR	4.7 16
C510	RCUV1H391K	390P 50
C511	ECST1CB475RR	4.7 16
C512	RCUV1H391K	390P 50
C513	ECST1CB475RR	4.7 16
C514	ECST1CB475RR	4.7 16
C515	ECST1CB475RR	4.7 16
C516	ECST1AB685RR	6.8 10
C517	ECST1CB475RR	4.7 16
C518	RCUS1H101KC	100P 50
C519	RCUS1H101KC	100P 50
C520	ECST1CB475RR	4.7 16
C521	RCUS1H102KB	0.001 50
C522	RCUS1H102KB	0.001 50
C523	ECUV1E104MD	0.1 25
C524	ECUV1E104MD	0.1 25
C530	ECST1AC106R	10 10
C551	ECST0GB226RR	22 4
C552	ECST0GB226RR	22 4
C553	ECST0GB226RR	22 4
C554	ECST0GB226RR	22 4
C555	ECST0GB226RR	22 4
C601	ECEA1APU102	1000 10
C602	RCUS1E103MD	0.01 25
C603	ECUV1E104ZF	0.1 25
C604	ECST1AC106R	10 10
C605	ECUV1E104ZF	0.1 25
C607	ECST1AC106R	10 10
C608	ECUV1E104ZF	0.1 25
C609	ECST1AC106R	10 10
C610	ECUV1E104ZF	0.1 25
C613	ECST1AC106R	10 10
C614	ECUV1E104ZF	0.1 25
C615	RCUS1H102KB	0.001 50
C616	ECST1AC106R	10 10
C617	ECUV1E104ZF	0.1 25
C618	ECST1AC106R	10 10
C619	ECUV1E104ZF	0.1 25
C620	ECST1AC106R	10 10
C622	RCSE1AT225RE	2.2 10
C623	ECUV1E224ZF	0.22 25
C624	RCUS1E103MD	0.01 25
C625	RCUS1E103MD	0.01 25
C626	RCUS1E103MD	0.01 25
C627	ECST1AC106R	10 10
C629	RCUS1H220KC	22P 50
C632	ECUV1E104ZF	0.1 25
C635	RCUS1H102KB	0.001 50
C636	ECST1AC106R	10 10
C637	ECST1AC106R	10 10
C640	ECEA1APU471	470 10
C641	ECEA1APU471	470 10
C642	ECST1AC106R	10 10
C643	ECST1AC106R	10 10
C644	ECST1AC106R	10 10
C650	ECST1AC106R	10 10
C651	ECST1VA104RR	0.1 35
C652	ECST1AC106R	10 10
C653	ECST1AC106R	10 10
C660	RCUS1H331K	330P 50
C661	RCUS1H331K	330P 50
C662	RCUS1E103MD	0.01 25
C663	RCUS1H331K	330P 50
C664	RCUS1H331K	330P 50
C665	RCUS1H331K	330P 50
C666	RCUS1H331K	330P 50
C667	RCUS1H331K	330P 50
C668	RCUS1H331K	330P 50
C670	RCUS1H101K	100P 50
C671	RCUS1H102KB	0.001 50
C672	RCUS1H102KB	0.001 50
C673	RCUS1H102KB	0.001 50
C674	RCUS1H102KB	0.001 50
C675	RCUS1H331K	330P 50
C676	RCUS1H331K	330P 50
C677	RCUS1H102KB	0.001 50
C678	RCUS1H102KB	0.001 50
C679	RCUS1H102KB	0.001 50
C680	RCUS1H102KB	0.001 50
C681	RCUS1H102KB	0.001 50
C682	RCUS1H102KB	0.001 50
C701	ECST1AC106R	10 10
C702	RCUS1H330KC	33P 50
C703	RCUS1H330KC	33P 50
C704	RCSE1CT105RE	1 16
C705	ECUV1E104MD	0.1 25
C706	ECUV1E104MD	0.1 25
C707	ECST1AB685RR	6.8 10
C708	ECST1AB335RR	3.3 10
C801	ECUV1E104ZF	0.1 25
C802	ECEV0JV330UR	33 6.3
C803	ECWV1E683JA9	0.068 25
C804	ECEV0JV101P	100 6.3
C805	ECEV1EN220P	22 25
C806	ECUV1C225ZFL	0.22 16
C808	RCUS1H560KC	56P 50
C810	ECUV1E104MD	0.1 25
C811	RCUS1H560KC	56P 50
C812	ECUV1C224KD	0.22 16
C813	RCUS1H561KB	560P 50
C816	RCUS1H560KC	56P 50
C817	ECEV1EN220P	22 25
C818	ECUV1C154KRL	0.15 16
C819	RCUS1E103MD	0.01 25
C820	ECUV1C225ZFL	0.22 16
C821	RCUS1H221KB	220P 50
C822	RCUS1H682KB	0.0068 50
C823	RCUS1H682KB	0.0068 50
C824	RCUS1H101KC	100P 50
C825	ECUV1E683KB	0.068 25
C826	RCUV1H331KC	330P 50
C827	ECEV0JV101P	100 6.3
C828	ECEV0GV470R	47 4
C829	ECUV1C225ZFL	0.22 16
C830	RCUS1H152KB	0.0015 50
C831	RCUV1H102KB	0.001 50

Ref. No.	Part No.	Value.	Ref. No.	Part No.	Value.	Ref. No.	Part No.	Value.
C832	RCUS1E103MD	0.01 25	C953	RCUS1H470KC	47P 50	C1011	RCUS1H331K	330P 50
C833	ECEA0GKS470	47 4	C955	ECEV1HV010R	1 50	C1012	ECST0JD686R	68 6.3
C835	ECEV0GV221P	220 4	C956	ECUV1E104ZF	0.1 25	C1013	ECST0JD686R	68 6.3
C836	ECUV1E104ZF	0.1 25	C957	ECUV1E104ZF	0.1 25	C1014	ECUV1E104MD	0.1 25
C838	ECUV1C334KRL	0.33 16	C958	ECEV0JV101P	100 6.3	C1015	ECUV1E104MD	0.1 25
C840	RCUS1H332MD	0.0033 50	C960	ECEV0JV101P	100 6.3	C1016	RCSE1CT105RE	1 16
C841	ECEV1EN220P	22 25	C971	ECUV1E104ZF	0.1 25	C1017	ECUV1E104MD	0.1 25
C843	ECEV1EN3R3R	3.3 25	C972	ECEV1CV470P	47 16	C1018	ECST0JB106R	10 6.3
C845	RCUV1E333MD	0.033 25	C973	RCUS1H470KC	47P 50	C1019	RCUS1H101K	100P 50
C846	RCUS1H182KB	0.0018 50	C975	ECEV1CV470P	47 16	C1020	RCUS1H101K	100P 50
C847	ECST0JB106R	10 6.3	C976	ECEV1CV470P	47 16	C1021	RCUS1H101K	100P 50
C848	RCUS1E103MD	0.01 25	C977	ECEV1CV470P	47 16	C1022	RCUS1H101K	100P 50
C850	RCUS1E103MD	0.01 25	C978	ECEV0JV330UR	33 6.3	C1025	RCUS1H102KB	0.001 50
C851	ECEV1EN220P	22 25	C979	ECEV1CV470P	47 16	C1026	RCUS1H102KB	0.001 50
C852	ECEV1EN220P	22 25	C980	RCUS1H472KB	0.0047 50	C1027	RCUS1H102KB	0.001 50
C853	ECEV1EN220P	22 25	C981	ECEV1CV470P	47 16	C1028	RCUS1H102KB	0.001 50
C855	ECEV1EN220P	22 25	C1001	ECST0JB106R	10 6.3	C1029	RCUS1E103MD	0.01 25
C856	ECEV1CV470P	47 16	C1002	ECST0JB106R	10 6.3	C1030	RCUS1E103MD	0.01 25
C857	ECUV1C225ZFL	0.22 16	C1003	ECST0JB106R	10 6.3	C1031	ECST1CB475RR	4.7 16
C858	ECUV1C225ZFL	0.22 16	C1004	ECST0JB106R	10 6.3	C1032	ECST1CB475RR	4.7 16
C951	ECEV0JV101P	100 6.3	C1005	ECST1CB475RR	4.7 16	C1033	ECUV1E224ZF	0.22 25
C952	ECUV1E104ZF	0.1 25	C1010	RCUS1H331K	330P 50	C1100	RCUS1H221KB	220P 50

■ REPLACEMENT PARTS LIST

Notes : * Important safety notice :
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* Bracketed indications in Ref. No. columns specify the area. (Refer to the first page for area.)
Parts without these indications can be used for all areas.

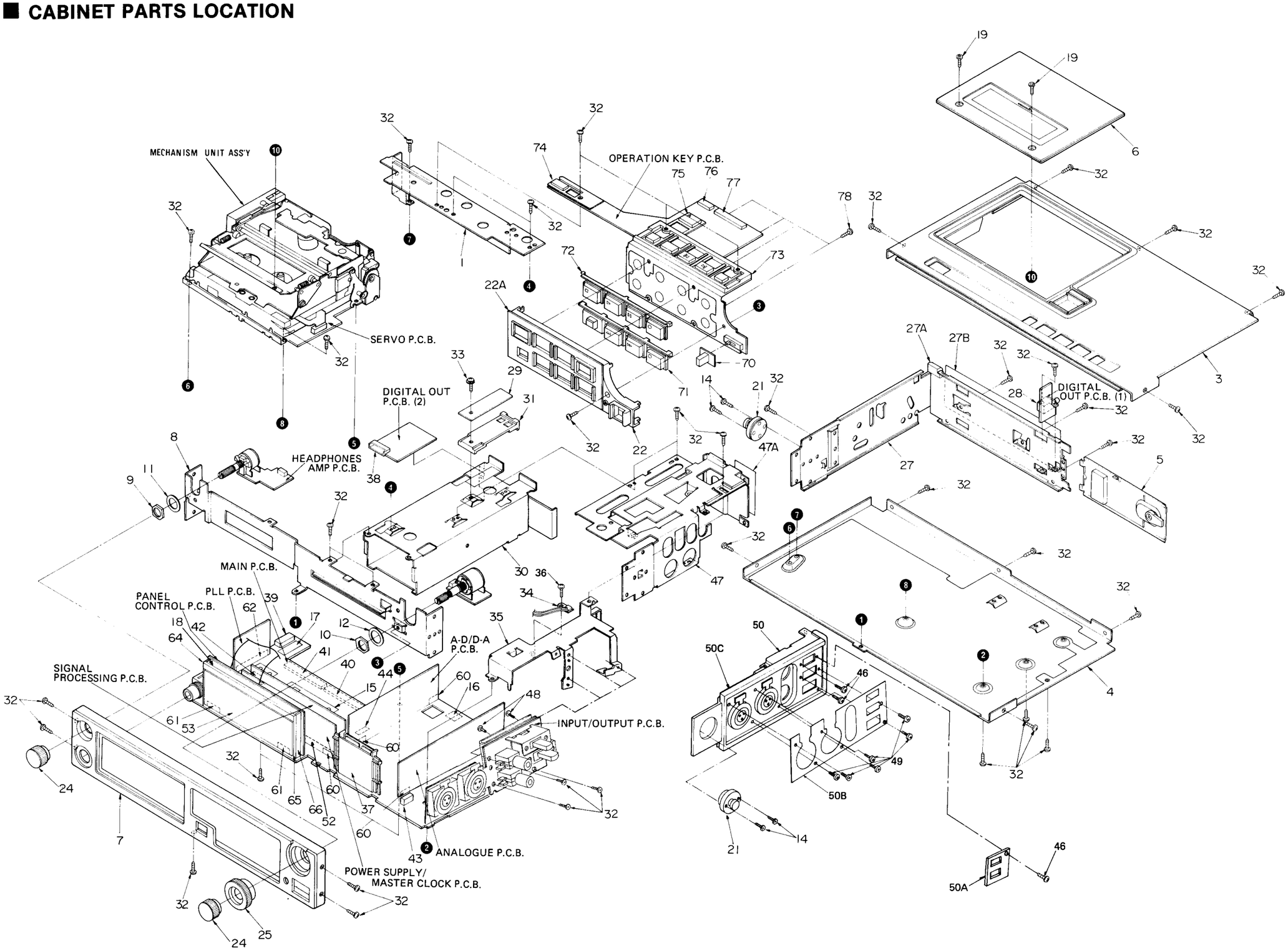
Ref. No.	Part No.	Description
INTEGRATED CIRCUITS		
IC1	AN7030S	I.C. RF AMP
IC100	AN7031S	I.C. PLL
IC101	TL712CPS	I.C. COMPARATOR
IC201	MN74HC08S	I.C. AND GATE
IC202	MN74HC04S	I.C. CLOCK OSC INVERTOR
IC203	MN74HC393	I.C. FREQUENCY DIVIDER
IC205	SN74LS62NS	I.C. VCO(DF CLOK)
IC206	TC7S00FTX	I.C. NAND
IC207	TC7S00FTX	I.C. NAND
IC208	TC7S00FTX	I.C. NSND
IC270	TC4S81FTX	I.C. AND GATE
IC271	MN4042BS	I.C. LACH(DIGITAL CONTR)
IC272	MN74HCU04	I.C. BUFFER
IC301	AN7032S	I.C. INPUT AMP.
IC302	AN7033S	I.C. OUTPUT AMP.
IC303	LA4530MT	I.C. H.P AMP.
IC401	UPD65031G241	I.C. GATE ARRAY
IC402	SAQ0002-1	I.C. DEM
IC403	SAQ0001-2	I.C. D.S.P
IC404	SAQ0003-1	I.C. ECC
IC405	SRM20256LM10	I.C. TBC RAM
IC406	SRM20256LM10	I.C. SIGNAL PROCESSING
IC500	MN86081	I.C. A/D CONVERTER
IC501	MN86081	I.C. A/D CONVERTER
IC502	MN66181	I.C. DIGITAL FILTER
IC503	SVIPCM55HP	I.C. D/A CONVERTER
IC504	UPD4053BGT	I.C. ANALOGUE SWITCH
IC505	NJM4560M	I.C. OP AMP
IC551	NJM4560M	I.C. OP AMP
IC601	TK10681MT	I.C. POWER SUPPLY(+5V)
IC602	TK10681MT	I.C. POWER SUPPLY(+5V)
IC603	M5236MLT	I.C. POWER SUPPLY(+5V)
IC604	AN6914S	I.C. COMPARATER
IC605	M5236MLT	I.C. POWER SUPPLY(+5V)
IC606	TK10681MT	I.C. POWER SUPPLY(+5V)
IC607	TK10681MT	I.C. POWER SUPPLY(+5V)
IC608	TK10681MT	I.C. POWER SUPPLY(+5V)
IC609	AN6612S	I.C. MODE MOTOR
IC610	MN188322RRG	I.C. MICRO COMPUTER
IC651	AN6914S	I.C. COMPARATER
IC652	TA8401FST	I.C. F/R MOTOR DRIVE
IC701	MN15845RRF	I.C. MICRO COMPUTER(LCD)
IC702	SCI7700YTA	I.C. RESET
IC703	SCI7700YTA	I.C. RESET
IC704	SCI7700YTA	I.C. RESET
IC705	SCI7710YBA	I.C. POWER SUPPLY(+5V)
IC751	UPD74HC164G	I.C. LED DISPLAY
IC752	UPD74HC273G	I.C. LED LACH DRIVER
IC801	MN52080SDE	I.C. DIGITAL SERVO
IC802	AN8320F	I.C. LINER SERVO
IC803	AN8285S	I.C. CYLINDER MOTOR
IC804	AN8285S	I.C. CAPSTAN MOTOR DRIVE
IC805	TK10681MT	I.C. POWER SUPPLY(+5V)
IC806	MN4066BS	I.C. GAIN SELECT SWITCH
IC807	TC4S01FTW	I.C. NOR GATE
IC951	NJM4193MT	I.C. DD CONVERTER (-5V)
IC952	M5290FP	I.C. POWER SUPPLY(+9V)
IC953	NJM4193MT	I.C. DD CONVERTER(+9V)
IC954	AN4250S	I.C. OP AMP(+5V)
IC955	TC4S81FTX	I.C. AND GATE
IC956	TC4S69FTX	I.C. INV GATE
IC957	TC4S69FTX	I.C. INV GATE
IC1001	NJM2068MDT2	I.C., OP AMP.
IC1002	NJM2068MDT2	I.C., OP AMP.
IC1003	UPD4053BGT	I.C. INPUT SELECT SWITCH
IC1004	UPD4053BGT	I.C. INPUT SELECT SWITCH
IC1005	NJM5532MDT	I.C., OP AMP.
IC1006	M5290FP	I.C. POWER SUPPLY
IC1100	TC7S00FTX	I.C. NAND GATE
TRANSISTORS		

Ref. No.	Part No.	Description
Q1	2SD1328TTW	TRANSISTOR
Q2	2SD1328TTW	TRANSISTOR
Q3	2SC3937TW	TRANSISTOR
Q4	2SD1328TTW	TRANSISTOR
Q5	2SC3937TW	TRANSISTOR
Q6	2SD1328TTW	TRANSISTOR
Q7	2SD1819STW	TRANSISTOR
Q201	2SC3929TTW	TRANSISTOR
Q202	2SC3929TTW	TRANSISTOR
Q203	2SC3931DTW	TRANSISTOR
Q204	2SC3929TTW	TRANSISTOR
Q205	2SC3929TTW	TRANSISTOR
Q301	2SD1328STW	TRANSISTOR
Q302	2SD1328STW	TRANSISTOR
Q303	UN5213TW	TRANSISTOR
Q304	2SD1819STW	TRANSISTOR
Q305	2SD1819STW	TRANSISTOR
Q306	UN5213TW	TRANSISTOR
Q307	UN5113TW	TRANSISTOR
Q308	UN5113TW	TRANSISTOR
Q309	UN5113TW	TRANSISTOR
Q310	UN5113TW	TRANSISTOR
Q311	2SD1328STW	TRANSISTOR
Q312	2SD1328STW	TRANSISTOR
Q313	UN5113TW	TRANSISTOR
Q314	UN5213TW	TRANSISTOR
Q351	2SD1819STW	TRANSISTOR
Q352	2SD1819STW	TRANSISTOR
Q353	2SD1819STW	TRANSISTOR
Q354	2SD1819STW	TRANSISTOR
Q355	2SC3929TTW	TRANSISTOR
Q356	2SC3929TTW	TRANSISTOR
Q381	UN5113TW	TRANSISTOR
Q382	UN5113TW	TRANSISTOR
Q383	2SD1819STW	TRANSISTOR
Q384	2SD1819STW	TRANSISTOR
Q451	2SB1218S	TRANSISTOR
Q452	2SB1218S	TRANSISTOR
Q453	2SD1819STW	TRANSISTOR
Q454	2SD1819STW	TRANSISTOR
Q455	2SD1819STW	TRANSISTOR
Q456	2SD1819STW	TRANSISTOR
Q457	2SD1819STW	TRANSISTOR
Q458	2SD1819STW	TRANSISTOR
Q459	2SD1819STW	TRANSISTOR
Q460	2SD1819STW	TRANSISTOR
Q461	2SD1819STW	TRANSISTOR
Q462	2SD1819STW	TRANSISTOR
Q463	UN5113TW	TRANSISTOR
Q464	UN5113TW	TRANSISTOR
Q465	2SD1820STW	TRANSISTOR
Q466	UN5213TW	TRANSISTOR
Q500	UN5213TW	TRANSISTOR
Q601	2SD1820STW	TRANSISTOR
Q603	UN5213TW	TRANSISTOR
Q604	UN5213TW	TRANSISTOR
Q605	UN5213TW	TRANSISTOR
Q606	2SD1820STW	TRANSISTOR
Q608	UN5213TW	TRANSISTOR
Q609	2SB970S	TRANSISTOR
Q611	2SB956RTW	TRANSISTOR
Q612	2SB956RTW	TRANSISTOR
Q613	UN5213TW	TRANSISTOR
Q614	UN5213TW	TRANSISTOR
Q615	UN5219TW	TRANSISTOR
Q618	2SB956RTW	TRANSISTOR
Q619	UN5213TW	TRANSISTOR
Q651	2SB1218S	TRANSISTOR
Q652	2SD1820STW	TRANSISTOR
Q653	UN5216TW	TRANSISTOR
Q654	2SB970S	TRANSISTOR
Q655	2SB956RTW	TRANSISTOR

Ref. No.	Part No.	Description
Q656	2SB956RTW	TRANSISTOR
Q658	2SD1820STW	TRANSISTOR
Q701	2SD1819STW	TRANSISTOR
Q702	UN5213TW	TRANSISTOR
Q703	UN5213TW	TRANSISTOR
Q704	2SD1820STW	TRANSISTOR
Q801	UN5213TW	TRANSISTOR
Q802	2SB956RTW	TRANSISTOR
Q803	2SD813RTW	TRANSISTOR
Q804	2SB956RTW	TRANSISTOR
Q805	2SD813RTW	TRANSISTOR
Q806	2SB956RTW	TRANSISTOR
Q807	2SD813RTW	TRANSISTOR
Q808	2SB956RTW	TRANSISTOR
Q809	2SD813RTW	TRANSISTOR
Q810	2SB956RTW	TRANSISTOR
Q811	2SD813RTW	TRANSISTOR
Q812	2SB956RTW	TRANSISTOR
Q813	2SD813RTW	TRANSISTOR
Q814	2SB956RTW	TRANSISTOR
Q815	2SD813RTW	TRANSISTOR
Q816	2SB956RTW	TRANSISTOR
Q817	2SD813RTW	TRANSISTOR
Q818	UN5113TW	TRANSISTOR
Q819	2SD1819RTW	TRANSISTOR
Q820	2SD1819STW	TRANSISTOR
Q821	2SD1819RTW	TRANSISTOR
Q822	2SD1819RTW	TRANSISTOR
Q823	UN5213TW	TRANSISTOR
Q824	UN5213TW	TRANSISTOR
Q825	UN5213TW	TRANSISTOR
Q950	2SB1219STW	TRANSISTOR
Q951	2SD1820STW	TRANSISTOR
Q952	2SD1478RTW	TRANSISTOR
Q953	2SD1478RTW	TRANSISTOR
Q954	UN5213TW	TRANSISTOR
Q955	2SB956RTW	TRANSISTOR
Q956	UN5213TW	TRANSISTOR
Q957	UN5213TW	TRANSISTOR
Q1001	UN5113TW	TRANSISTOR
Q1002	2SD1819STW	TRANSISTOR
Q1003	2SD1819STW	TRANSISTOR
Q1004	2SD1819STW	TRANSISTOR
Q1005	2SD1819STW	TRANSISTOR
Q1006	2SB1219RTW	TRANSISTOR
Q1007	UN5213TW	TRANSISTOR
Q1008	2SD1820RTW	TRANSISTOR
DIODES		
D201	RVDFC52M	DIODE
D301	MA141WKTW	DIODE, SI
D451	MA141WKTW	DIODE, SI
D452	MA141WKTW	DIODE, SI
D453	MA141WATW	DIODE
D601	RVDERC81004V	DIODE
D602	MA141WKTW	DIODE, SI
D603	MA3039LTW	DIODE, SI
D604	MA141WKTW	DIODE, SI
D605	MA141WKTW	DIODE, SI
D606	MA141WKTW	DIODE, SI
D607	MA141WKTW	DIODE, SI
D608	MA3033LTW	DIODE, SI
D609	MA3056MTW	DIODE, SI
D651	MA157ATW	DIODE, SI
D653	MA701TX	DIODE
D654	MA701TX	DIODE
D655	MA701TX	DIODE
D656	MA701TX	DIODE
D657	MA141WKTW	DIODE, SI
D658	MA701TX	DIODE
D659	MA701TX	DIODE
D701	MA142WKTW	DIODE, SI
D703	MA141WKTW	DIODE, SI
D704	MA142WKTW	DIODE, SI
D709	MA701TX	DIODE
D710	MA141WKTW	DIODE, SI
D751	LN1261CALTR	DIODE, SI
D752	LN1261CALTR	DIODE, SI
D753	LN1261CALTR	DIODE, SI
D754	LN1261CALTR	DIODE, SI
D755	LN1261CALTR	DIODE, SI
D756	LN1261CALTR	DIODE, SI
D757	LN1261CALTR	DIODE, SI
D758	MA151WA	DIODE
D759	MA151WA	DIODE
D760	MA151WA	DIODE
D761	MA151WA	DIODE
D762	MA151WA	DIODE
D763	MA151WA	DIODE
D764	MA151WA	DIODE
D765	MA151WA	DIODE
D766	MA151WA	DIODE
D801	MA143TW	DIODE, SI
D802	MA143TW	DIODE, SI
D803	MA143TW	DIODE, SI
D804	MA141WKTW	DIODE, SI
D805	MA141WKTW	DIODE, SI
D950	MA141WKTW	DIODE, SI
D951	MA701TX	DIODE
D952	MA701TX	DIODE
VARIABLE RESISTORS		
VR1	EVM7QSX00B53	V.R, RF RECORDING LEVEL
VR2	EVM7QSX00B13	V.R, RF RECORDING
VR3	EVM7QSX00B13	V.R, RF RECORDING
VR5	EVM7QSX00B14	V.R, EQUIVALENT CIRUIT
VR6	EVM7QSX00B14	V.R, EQUIVALENT CIRUIT
VR7	EVM7QSX00B14	V.R, EQUIVALENT CIRUIT
VR8	EVM7QSX00B14	V.R, EQUIVALENT CIRCUIT
VR100	EVM7QSX00B23	V.R, ATF PLAY ADJ.
VR101	EVM7QSX00B23	V.R, ENVELOPE ADJ.
VR102	EVM7QSX00B52	V.R, VCO ADJ.
VR301	EVJRCAP20A54	V.R, H.P LEVEL CONTROL
VR302	EWJSJAF03A14	V.R., REC LEVEL CONTROL
VR551	EVM7QSX00B13	V.R, OFFSET VOLTAGE ADJ.
VR552	EVM7QSX00B13	V.R, OFFSET VOLTAGE ADJ.
VR601	EVM7QSX00B13	V.R, BATTERY CHECK
VR602	EVM7QSX00B53	V.R, POWER SUPPLY ADJ.
VR603	EVM7QSX00B53	V.R, POWER SUPPLY ADJ.
VR604	EVM7QSX00B53	V.R, LOADING TIME ADJ.
VR651	EVM7QSX00B14	V.R, DEW ADJ.
VR801	EVM7QSX00B54	V.R, PG PHASE ADJ.
VR951	EVM7QSX00B54	V.R, AD POWER SUPPLY +5V
VR952	EVM7QSX00B54	V.R, RF POWER SUPPLY(9V)
COILS AND TRANSFORMERS		
L201	ELJFA100KF	COIL
L251	ELJFA100KF	COIL
L270	RLL960060-0	COIL
L301	ELJFA101KF	COIL
L302	ELJFA101KF	COIL
L601	ELJFA100KF	COIL
L602	ELJFA100KF	COIL
L603	ELJFA100KF	COIL
L604	ELJFA100KF	COIL
L605	ELJFA100KF	COIL
L606	ELJFA101KF	COIL
L607	ELJFA101KF	COIL
L801	RLQZQ101KTWA	COIL
L802	RLQZQ101KTWA	COIL
L951	RLQZZ471K-Z	COIL
L952	RLQZZ471K-Z	COIL
L953	RLQZW101KT-W	COIL
L954	RLQZZ471K-Z	COIL
L1100	RLL800050-0	COIL
L1101	ELJFA100KF	COIL
L1102	ELJFA100KF	COIL
L1103	ELJFA100KF	COIL
L1104	ELJFA100KF	COIL
COMPONENT COMBINATIONS		
X201	SVQLT283-F	COMBINATION PART
X401	RVCQ24576NZN	COMBINATION PART
X402	RVCQ11289NZN	COMBINATION PART
X701	RVBCSA3R00MG	COMBINATION PART

Ref. No.	Part No.	Description
Z1	RXA50L3R000L	CNMBINATION COM
Z2	RXA50DR4001Z	CNMBINATION COM
Z101	RLM9A2T-T	COMBINATION PART
Z102	RLM9A1T-T	COMBINATION PART
Z103	RXA50DR1001L	CNMBINATION COM
Z301	RXACLP2233-L	CNMBINATION COM
Z302	RXACLP2235-L	CNMBINATION COM
FUSES		
F601	XBD1A16NA1	CURRENT FUSE
SWITCHES		
S1	RSS2F10ZA-Q	SLIDE SW, INPUT SELECT
S2	RSS3D29ZA-Q	SLIDE SW, PAD/MIC LIM
S766 ⚠	ESD100123	SW, POWER
OTHERS		
J1	RJF1106YA	TERMINAL BOARD
J2	RJF1105ZA	TERMINAL BOARD
J3	SJSD13	CONNECTOR
J4	RJJE3S2ZA-C	SOCKET
J5	RJJ1C7ZA-H	SOCKET
J6	RJS3D4ZA	JACK
J7	RJS3D4ZA	JACK

■ CABINET PARTS LOCATION



■ REPLACE

Notes : * Important safe
Components iq
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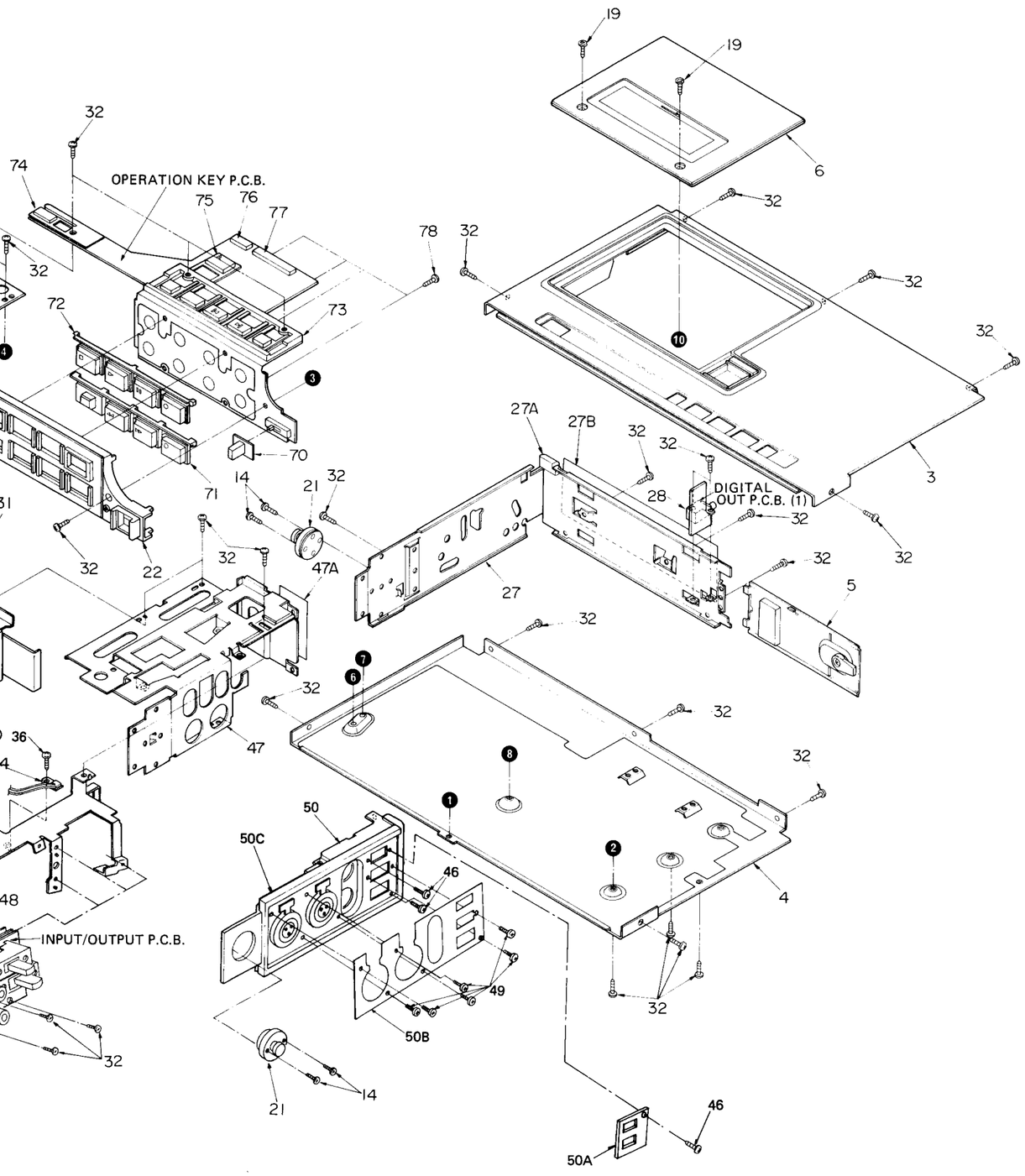
* Bracketed indi
Parts without t

Ref. No.	Part No
CABINET AND CHASSIS	
1	3UAAMD1ZA
3	1KMA260ZA
4	1KFA260ZA
5	1KKA250ZA
6	1KGA260ZA
7	1GPA260ZA
8	RUA817ZA
9	XNS7D
10	XNS9D
11	XWS7AW
12	XWS9AW
14	XQS2+A8FZ
15	RHR2176ZA
16	RHR3323ZA
17	RHR2174ZA
18	RHR2196ZA
19	RHE5166ZA
21	RKT149ZA-
22	RYPQ250KJ
22A	RGK1364ZA
24	RBN9006ZA
25	RBN9007ZA
27	RZU1V250K
27A	RGP118ZA
27B	RHG1199ZA
28	RUL1056ZA
29	RUS760ZA
30	RWBV250KJ
31	RME463ZA
32	XQN2+AM3I
33	RHE5179ZA
34	EYH-S78D
35	RUL1116ZA



■ REPLACEMENT PARTS LIST

Notes : * Important safety notice :
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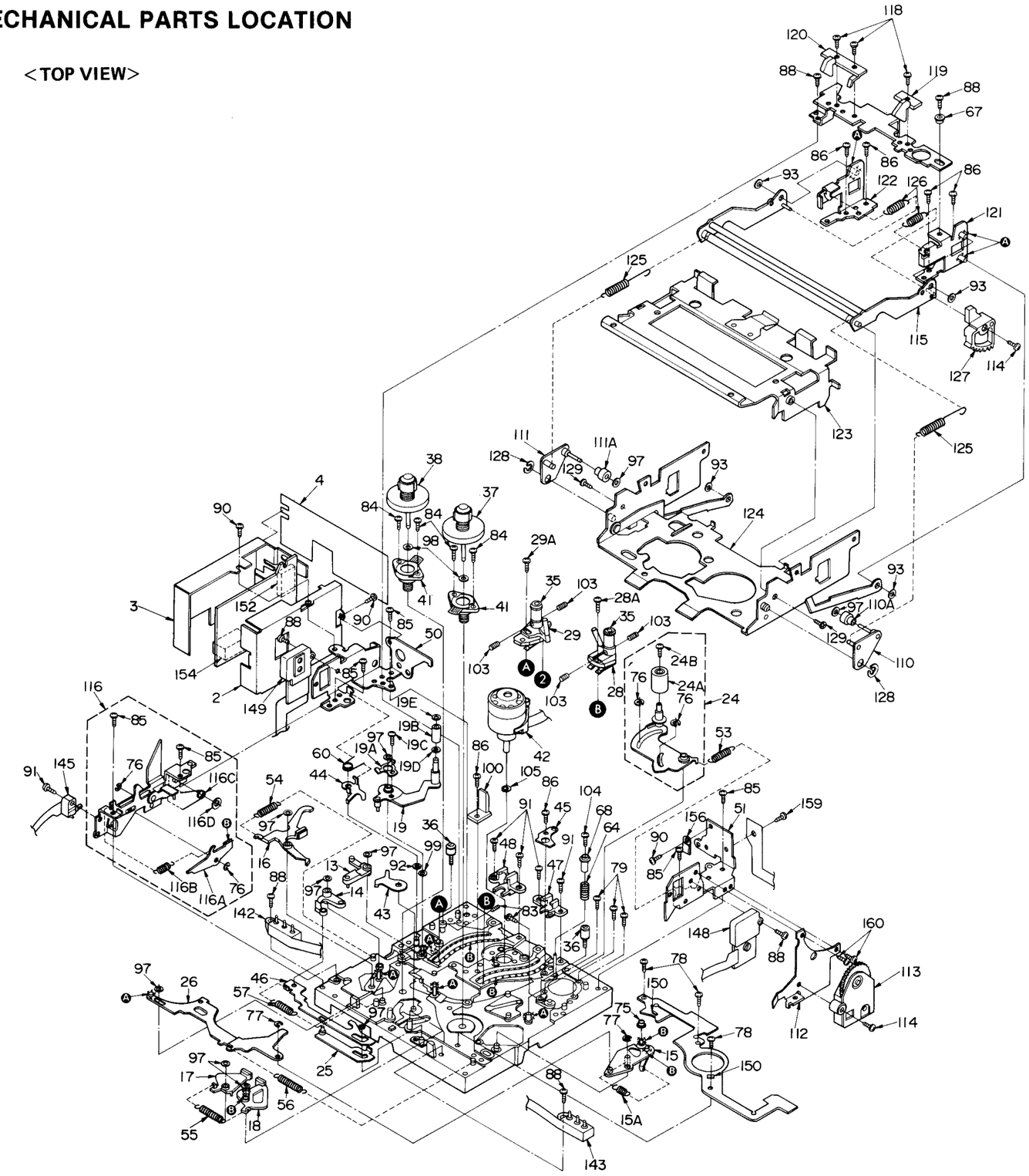
Ref. No.	Part No.	Description
CABINET AND CHASSIS		
1	3JAAMD1ZA	CHASSIS
3	1KMA260ZA	UPPER CASE
4	1KFA260ZA	BOTTOM CASE
5	1KKA250ZA	BATTERY COVER
6	1KGA260ZA	CASSETTE LID
7	1GPA260ZA	FRONT PANEL ASS'Y
8	RUA817ZA	CHASSIS
9	XNS7D	NUT
10	XNS9D	NUT
11	XWS7AW	WASHER
12	XWS9AW	WASHER
14	XQS2+A8FZ	SCREW
15	RHR2176ZA	HOLDER
16	RHR3323ZA	HOLDER
17	RHR2174ZA	HOLDER
18	RHR2196ZA	SPACER
19	RHE5166ZA	SCREW
21	RKT149ZA-0	BELT HOLDER
22	RYPQ250KM	CONTROL PANEL
22A	RGK1364ZA-0	PLATE
24	RBN9006ZA-0	KNOB, REC(L)
25	RBN9007ZA-0	KNOB, REC(R)
27	RZU1V250KM	CHASSIS
27A	RGP1188ZA-0	PANEL
27B	RHG1199ZA-0	RUBBER
28	RUL1056ZA	ANGLE
29	RUS760ZA	SPRING
30	RWBV250KM	BATTERY CASE
31	RME463ZA	HOLDER
32	XQN2+AM3FZ	SCREW
33	RHE5179ZA	SCREW
34	EYH-S78D	HALL ELEMENT
35	RUL1116ZA	ANGLE
36	XQN2+AJ3	SCREW
37	1JBAMD1ZA	BATTERY TERMINAL
38	RJP9G32ZA	CONNECTOR
39	RJS12M6ZA	CONNECTOR
40	RJS26Q12ZA	CONNECTOR
41	RJS30Q12ZA	CONNECTOR
42	RJE278YA-D	CONNECTOR
43	RJE280YA-D	CONNECTOR
44	RJE281YA-D	CONNECTOR
46	XQN26+A4	SCREW
47	RUA819YA	CHASSIS
47A	RHG1198ZA-0	RUBBER
48	XQN2+AM5	SCREW
49	XQN26+A9FZ	SCREW
50	RUA873ZA	CHASSIS
50A	RHS776ZA	SHEET
50B	RGK1384ZA	PLATE
50C	RGP1239ZA	PANEL
52	RJT1123ZA	TERMINAL
53	EDD084ZE0A4P	DISPLAY
60	RJT1117ZA	CONNECTOR
61	RJT1118ZA	CONNECTOR
62	RJT1119ZA	CONNECTOR
64	RHR2186ZA	HOLDER
65	RHR352ZA	HOLDER
66	LN0811CP4	DIODE
70	TM488	KNOB
71	BT483	CONTROL KEY
72	BT482	CONTROL KEY
73	BT485	CONTROL KEY
74	BT487	CONTROL KEY
75	BT486	CONTROL KEY
76	SDX521030611	CONNECTOR
77	SDX521032011	CONNECTOR
78	XTB2+5G	SCREW

SV-260 SV-260

■ MECHANICAL PARTS LOCATION

<TOP VIEW>



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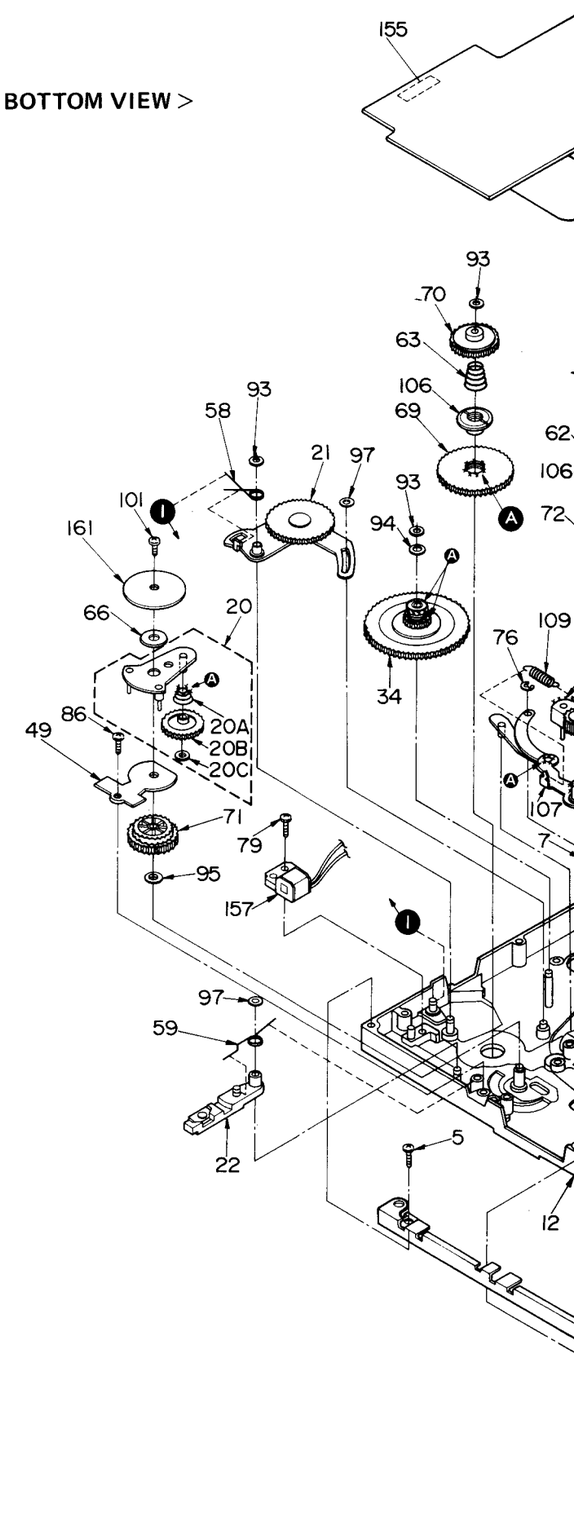

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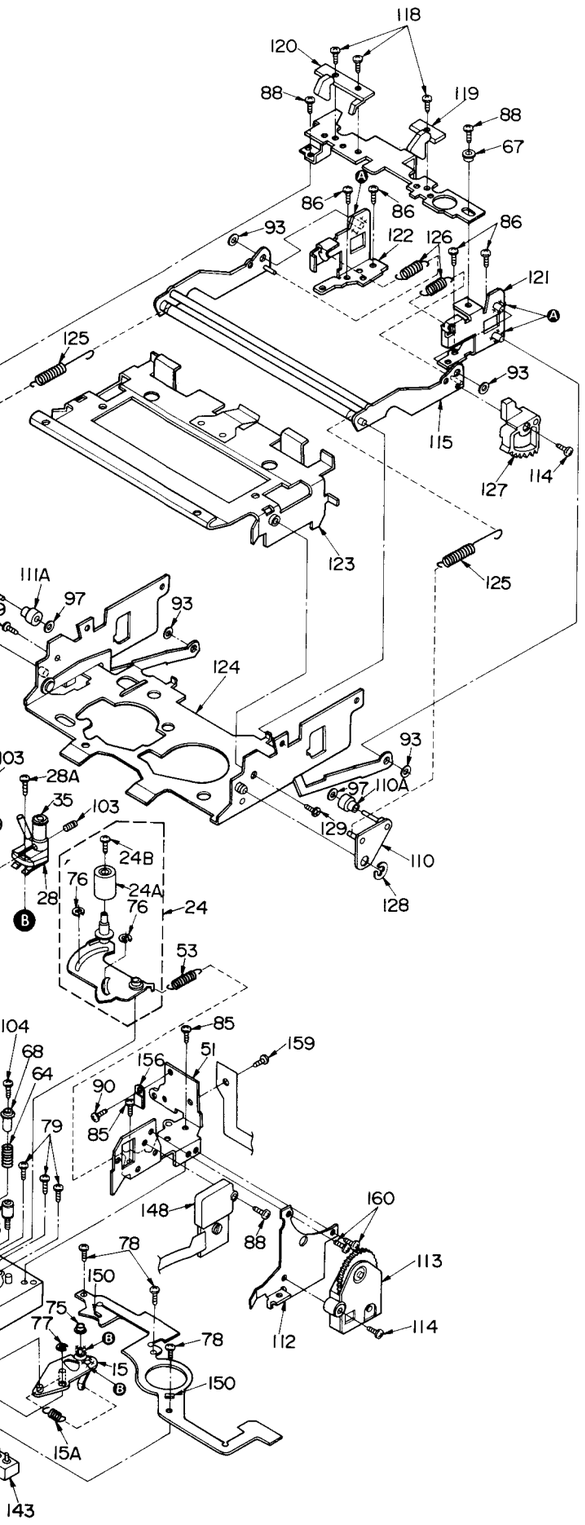

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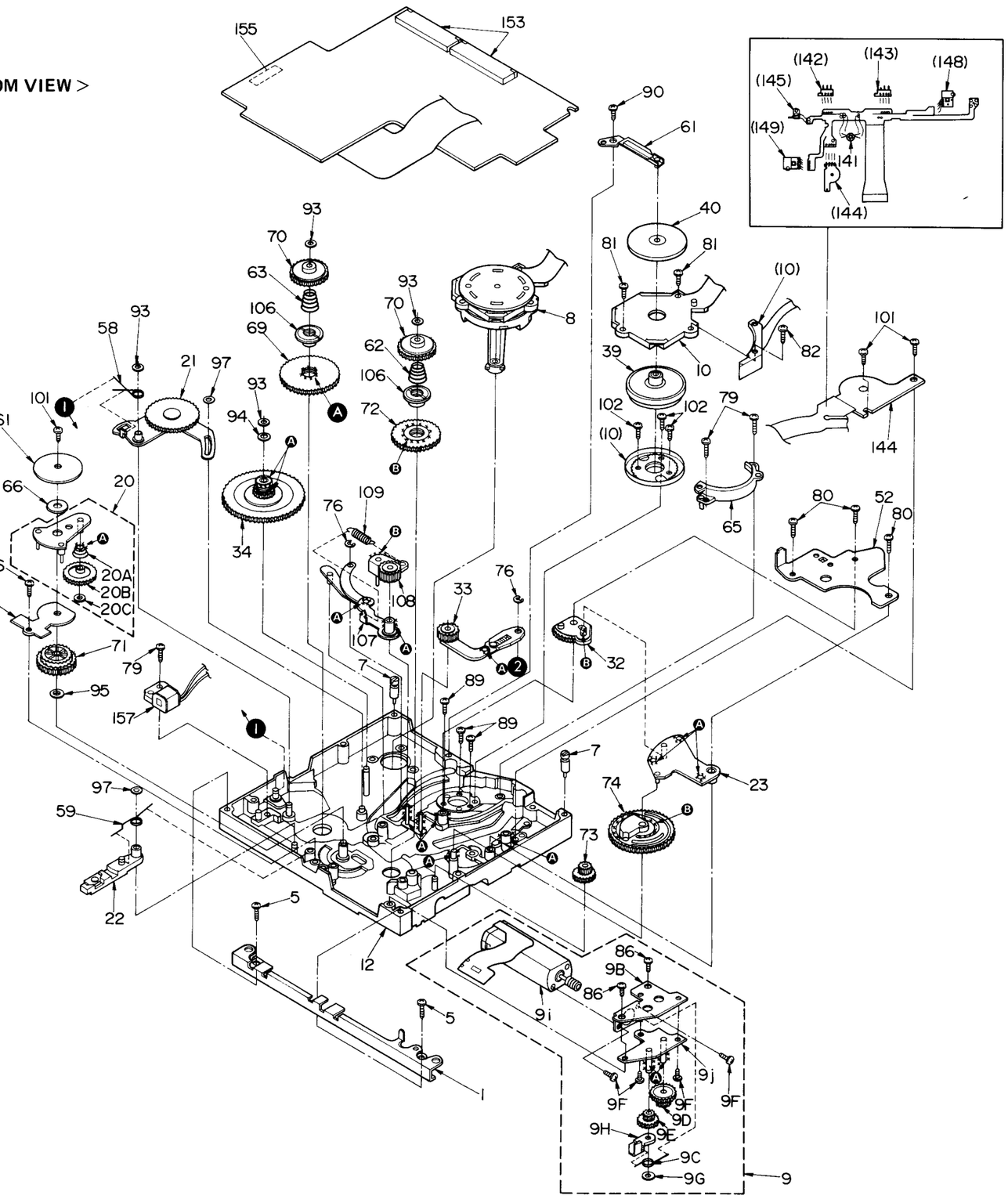
< BOTTOM VIEW >



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■ REPLACEMENT PARTS LIST

Ref. No.	Part No.	Description
CASSETTE DECK		
1	RUL1021ZA	ANGLE
2	RMC1182ZA	SHIELD PLATE
3	RMC1183ZA	SHIELD PLATE
4	RMC1217ZA	SHIELD PLATE
5	XQN16+A3	SCREW
7	RHR1363ZA	SCREW
8	1JQ0018ZA	MOTOR
9	1JQ0019ZA	MOTOR
9B	RUL988ZA	ANGLE
9C	RUW135ZA	SPRING
9D	RNG89ZA	GEAR
9E	RNG91ZA	GEAR
9F	XQN14+A16FZ	SCREW
9G	QBW2081A	WASHER
9H	RHR3176ZA	HOLDER
9I	PKN7EB04A	MOTOR
9J	1UL0053ZA	ANGLE
10	RWEVMD1KN	FG FPC
12	RFU149ZA	CHASSIS
13	1NL0040ZA	LEVER
14	1NL0041ZA	LEVER
15	1NL0049ZA	LEVER
15A	RUD99ZA	SPRING
16	1NL0050ZA	LEVER
17	1NL0051ZA	LEVER
18	1NL0052ZA	LEVER
19	1NL0053ZA	ARM
19A	RNL139ZA	LEVER
19B	RDR118ZA	ROLLER
19C	RHE5194ZA	SCREW
19D	QBW2010	WASHER
19E	QBW2081A	WASHER
20	1NL0055ZA	LEVER
20A	RUQ83ZA	SPRING
20B	RNG86ZA	GEAR
20C	QBW2008	WASHER
21	1NL0056ZA	LEVER
22	1NL0057ZA	LEVER
23	1NL0058ZA	LEVER
24	1NL0060ZA	LEVER
24A	1NB0001ZA	ROLLER
24B	RHE7040ZA	SCREW
25	1NR0027ZA	ROD ASS'Y
26	1NR0028ZA	ROD ASS'Y
28	1UG0005ZA	GUIDE
28A	XQN14+A16FZ	SCREW
29	1UG0006ZA	GUIDE
29A	XQS14+A3	SCREW
32	1NG0012ZA	GEAR
33	1NG0014ZA	GEAR
34	1NG0016ZA	GEAR
35	1DR0008ZA	PULLEY ASS'Y
36	1DR0009ZA	PULLEY ASS'Y
37	1DM0019ZA	REEL ASS'Y
38	1DM0020ZA	REEL ASS'Y
39	1DE0003ZA	COUNTER
40	1DE0004ZA	COUNTER
41	1HM0012ZA	SPACER
42	VEG0504	MAGNETIC HEAD
43	RNL125ZA	LEVER
44	RNL138ZA	LEVER
45	RNL140ZA	LEVER
46	RNR64ZA	ROD
47	RUG9006ZA	STOPPER
48	RUG9007ZA	GUIDE
49	RUL966ZA	ANGLE
50	RUL971YA	ANGLE
51	RUL972YA	ANGLE
52	RUL989ZA	PLATE
53	RUD100ZA	SPRING
54	RUD95ZA	SPRING
55	RUD96ZA	SPRING
56	RUD97ZA	SPRING
57	RUD98ZA	SPRING
58	RUW132ZA	SPRING
59	RUW133ZA	SPRING
60	RUW134ZA	SPRING
61	RUS740ZA	COIL SPRING
62	RUQ85ZA	SPRING
63	RUQ86ZA	SPRING
64	RUQ88ZA	SPRING
65	RUE9003ZA	ANGLE
66	RNN262ZA	SHAFT
67	RNN301ZA	SHAFT
68	RNS44ZA	SHAFT
69	RNG84ZA	GEAR
70	RNG85ZA	GEAR
71	RNG87ZA	GEAR
72	RNG88ZA	GEAR
73	RNG90ZA	GEAR
74	RNG92ZA	GEAR
75	RDR121ZA	ROLLER
76	XUC12FP	RETAINING RING
77	XUC15FP	RETAINING RING
78	XQN14+A12	SCREW
79	XQN14+A3	SCREW
80	XQN14+C25	SCREW
81	XQN14+C28Y	SCREW
82	XQN14+C4Y	SCREW
83	XQN16+A2FZ	SCREW
84	XQN16+A22	SCREW
85	XQN16+A25FZ	SCREW
86	XQN16+A3	SCREW
88	XQN16+A4	SCREW
89	XQN16+A4Y	SCREW
90	XQN2+A2	SCREW
91	XQN2+A45	SCREW
92	QBW2033	WASHER
93	QBW2008	WASHER
94	QBW2012	WASHER
95	QBK92014	WASHER
97	QBW2081A	WASHER
98	QBW2122	WASHER
99	QBW2010	WASHER
100	RHR3165ZA	HOLDER
101	RHE5116Z	SCREW
102	RHE5178ZA	SCREW
103	RHE5181ZA	SCREW
104	RHE5182ZA	SCREW
105	RHE5196ZA	WASHER
106	RHE5198ZA	SCREW
107	1NL0054ZA	LEVER
108	1NG0011ZA	GEAR
109	RUD101ZA	SPRING
110	1NL0061ZA	LEVER
110A	RNN216ZA	SHAFT
111	1NL0062ZA	LEVER
111A	RNN216ZA	SHAFT
112	RNL141YA	LEVER
113	RDG5935ZA	GEAR
114	XQN16+A55	SCREW
115	1NL0067ZA	LEVER
116	1NR0029ZA	ROD ASS'Y
116A	RNL136ZA	LEVER
116B	RUD87ZA	SPRING
116C	RUW127ZA	SPRING
116D	RNW240ZA	WASHER
117	RUL973YA	ANGLE
118	RHE5195ZA	SCREW
119	RHR3162ZA	HOLDER
120	RHR3318YA	HOLDER
121	1UL0054ZA	ANGLE
122	1UL0055ZA	ANGLE
123	1UL0056ZA	HOLDER
124	1UL0057ZA	ANGLE
125	RUD85ZA	SPRING
126	RUD86ZA	SPRING
127	RNG99ZA	GEAR
128	XUC25FZ	RETAINING RING
129	XQS14+A2	SCREW
141	RLL800050-0	COIL
142	EVQWR1001	VARIABLE RESISTOR

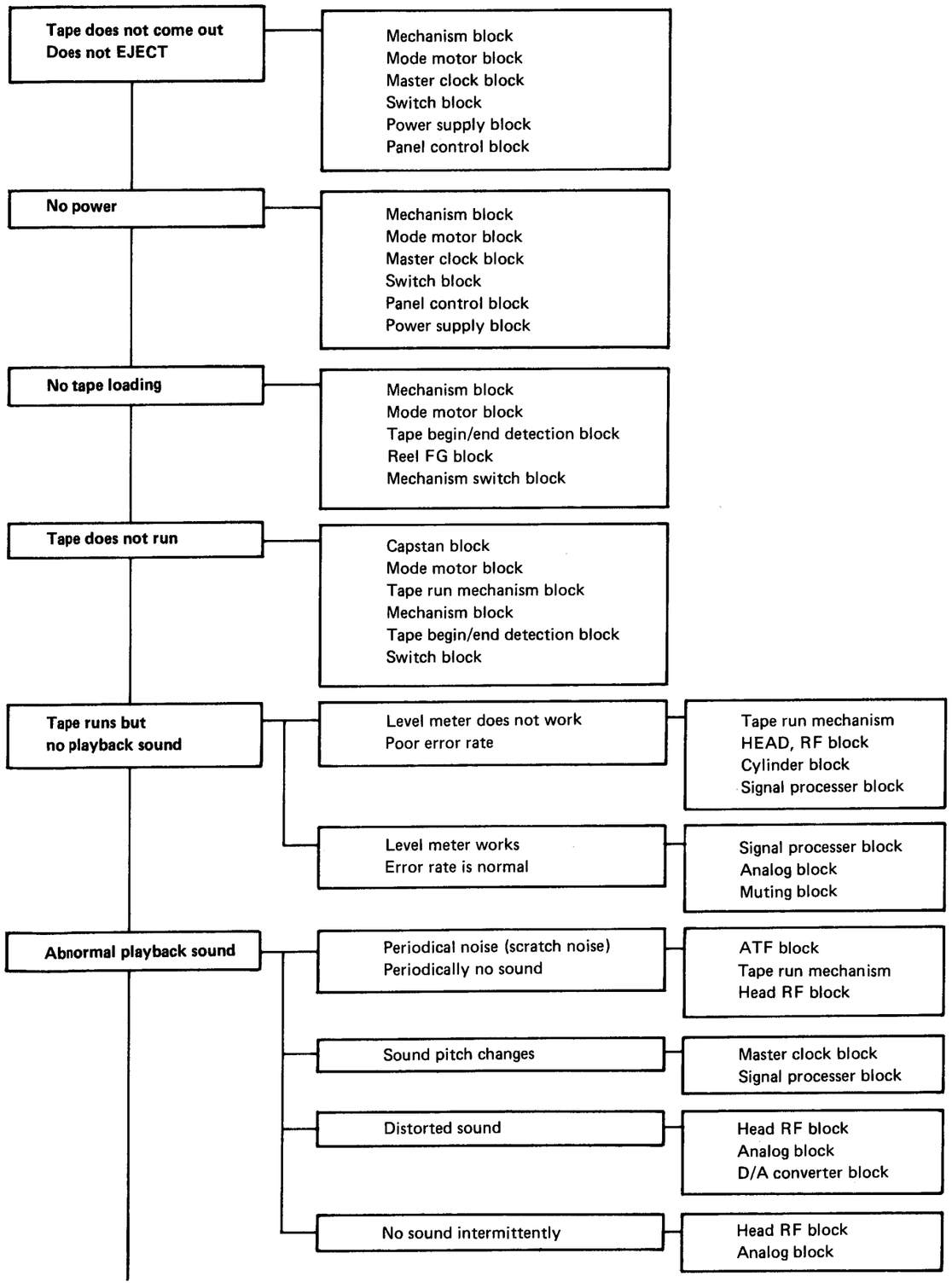
Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
143	EVQWR1002	SW	153	RJS18Q15YA	CONNECTOR
144	EVQWXC001	MODE SW	154	RJS5Q15ZA	CONNECTOR
145	RSH1A91YA-A	PUSH SWITCH	155	RJS6Q11YA	CONNECTOR
148	EVQWA0003	SW	156	EYH-S78G1	HALL ELEMENT
149	EVQWA0004	SW	157	RSE234ZA	MAGNET
150	ON2170SFS	PHOTO INTRRUPTER	159	XQN16+A2	SCREW
152	RJP12G30ZA	CONNECTOR	160	XQN16+A14	SCREW
			161	RHM274ZA	BRACKET

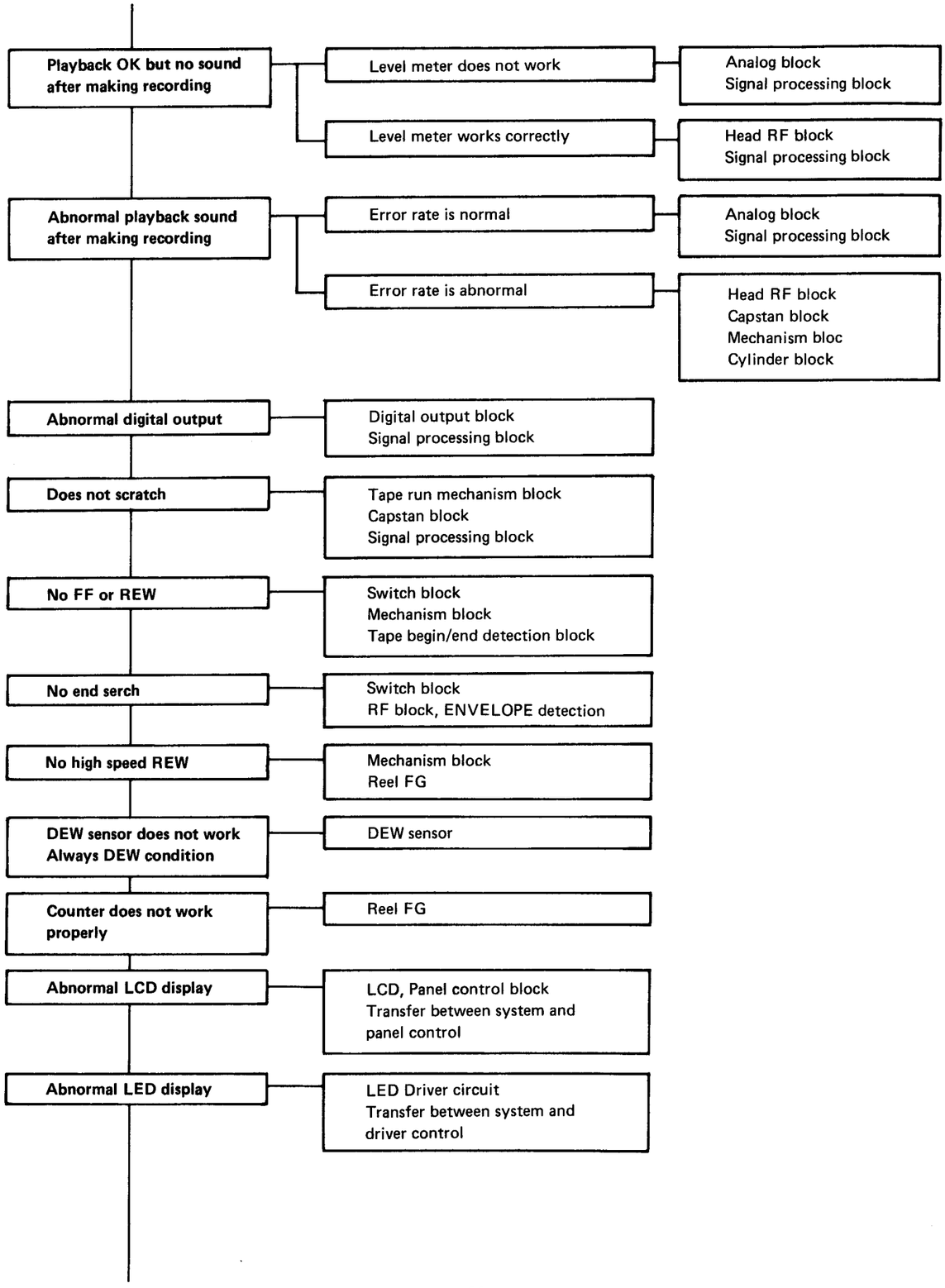
Notes : * Important safety notice :
Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

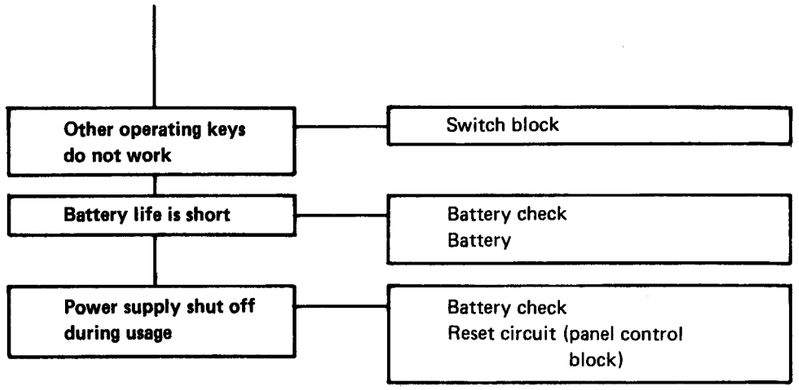
Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
PACKING MATERIAL			ACCESSORIES		
P2	RPH626ZA	PROTECTION BAG	A1 ⚠	RJP0F33ZB-E	COAXIAL CABLE
P3	RPN5463YA	CUSHION	A2 ⚠	SH-MA1EBY-K	AC ADAPTOR
P4	RPK0036	CARTON BOX	(EB)		
P5	XZB20X30A04	PROTECTION COVER	A2 ⚠	SH-MA1EY-K	AC ADAPTOR
P6	RPE725ZA	PAD	(E)		
P7	RPN5500ZA	PAD	A3	SH-MB1EY-K	BATTERY
P8	XZB10X15A04	PROTECTION COVER	A5	RQT0047E	INSTRUCTION MANUAL
			A7	RQD253ZA-2	CARRYING CASE
			A8	RQC9024ZA-0	SHOULDER BELT

■TROUBLESHOOTING GUIDE

SV-260 Troubleshooting







SV-260 key points for troubleshooting

Mechanism block

Loading mechanism
- Post roller
- Tension regulator
- Pinch roller
- Brake lever

Brake mechanism
- Brake lever
- Solenoid
- Solenoid driver

Mechanism switch block
- Tape hole detection switch
- Cassette detection switch
- Holder switch

Reel FG block
- Detection photo transistor
- Detection LED
- Reel FG AMP (servo PCB)

FPC & FPC connector

Mode motor block
- Mode motor
- Mode switch
- FPC & FPC connector
- Mode motor driver circuit
- Mode motor control circuit

Master clock block
- 28 MHz (Signal name : CK28M)
- 7 MHz (Signal name : 7MCK)
- 9.4 MHz (Signal name : SVCLK)

Switch block
- FPC & FPC connector
- Switch

HEAD, RF block
- Head FPC & FPC connector
- Head dirty
- Head cracked or damaged
- RF recording current
- Playback eye pattern

Tape begin/end detection block
- Begin/end detection photo transistor
- Begin/end detection LED
- Comparator circuit
- FPC & FPC connector

Power supply block
- Power supply regulator output
- Fuse
- Power supply diode (D601)
- Relay & relay driver

Capstan block
- Capstan FG
- FG AMP.
- Motor driver output
- Motor current

Cylinder block
- Cylinder FG
- Cylinder PG
- FG AMP.
- PG AMP.
- Motor driver output
- Motor current

ATF block
- RF ATF output
- ATF SYNC output

Signal processing block
- Data & clock to DA
- Data & clock to AD
- All clocks

Digital output block
- Digital output PB

Panel control block
- Panel control clock
- Panel/system control transfer
- Panel control reset

Analog block
- Input amplifier
- Output amplifier
- Muting circuit
- AD converter
- DA converter

Concerning the error rate

If the error rate is functioning correctly, it can be judged that all operations up to signal processing are functioning correctly, in other words, that there is no problem in the transport system.

Thus, when there is a problem with the playback sound, if the error rate is functioning correctly, the problem can be assumed to exist in the analog system.

Concerning the level meter

If the level meter is functioning correctly during playback, it indicates that the mechanism, head, and RF sections are all functioning correctly. In addition, if the level meter is functioning correctly during recording, it indicates that the analog system (input amplifier and AD) is functioning correctly.

Error indication and problem location

The SV-260 displays error indications from E-01 to E-07.

Although the error indications generally indicate problems with the tape, they will also be displayed for the following problems.

E-01	Mode motor related
	Mechanism related
E-02	Related to the begining and end sensors
E-03	Reel FG related
E-04	Capstan related
E-05	Mechanism transport related
E-06	Mechanism related
	Reel FG related
	Related to the begining and end sensors
E-07	Mechanism transport related
	Signal processing related
	Cylinder related

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